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ORIGINAL COMMUNICATIONS.

APHORISMS IN ASEPTIC AND ANTISEPTIC SURGERY AND GYNECOLOGY.

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(An article read before the Southern Surgical and Gynecological Society at Birmingham, Ala., December 4, 1888.)

In presenting this subject in the form of aphorisms, I hope to fill a need which we all feel, that of having before us, short, trite rules, for practical use, devoid of the ambiguity of verbiage too often found in our medical literature. Many of our young surgeons are literally frightened from a consideration, even, of antiseptic surgery, linking it with costly apparatus, atomizers, etc., while, if the subject could only be brought before them in a proper light, showing its great simplicity and at the same time its great worth, how easily it is practiced, and how valuable its services and results, we would have them all believers in, and practicers of, this, the greatest progress surgery has ever made, giving them better success in their surgical work. Before taking up the practical part of the subject, it would be well to look at the pathology of suppuration, and deduce some reasons for the employment of antiseptics.

It is well known that the air is full of micro-organisms, Miguel having found that the ordinary city atmosphere contains over 2,000 per cubic yard, and likewise our water. Some of these are pyogenic, and therefore when we make a wound we throw open the doors for the entrance of these germs.

Until recently suppuration was thought to be caused by the direct action of certain micro-organisms upon the tissues, and that these so-called pyogenic bacteria do have a certain effect upon suppuration and the formation of pus, is undoubtedly so. Among the micro-organisms given credit for this pyogenic power are the staphylococcus, aureus, albus prodigiosus, bacterium termo and the streptococci.

But since Brieger's discovery of the ptomaines, attention has been turned toward them as producers of certain morbid processes. Among these he discovered an alkaloid, cadaverine, obtainable from putrefaction, with a chemical formula of $C_5H_{16}N_2$.

According to Growitz this alkaloid is non-poisonous, occurs as a colorless liquid, soluble in water; and a 1 p. c. solution has a strong alkaline reaction. He found that the pure alkaloid contained no bacteria, and that a 2.5 p. c. solution kills the staphylococci in an hour, while a very small amount retards their growth; therefore the producers of cadaverine must be antagonistic to staphylococcus. Cadaverine when injected under the skin will cause suppuration in from three to five days, depending upon the strength and amount used. When he injected a mixture of the bacteria and cadaverine, diluted so as not to affect the bacteria, he caused phlegmon in the surrounding tissues, followed by necrosis of the skin.

Suppuration is caused by alkaloidal ptomaines, but the presence of the pyogenic bacteria greatly augment and favor this action, and increase the suppuration by their metabolic activity, forming other ptomaines or alkaloids. Thus the saying, "without bacteria no suppuration," practically holds good.

These ptomaines act on the tissues primarily as an irritant, causing an exaggeration of nutrition, exudation of white and red blood-corpuscles and serum, and afterward pus formation and tissue necrosis. Pus corpuscles are merely altered leucocytes. Our object in aseptic surgery and gynecology is to prevent the alkaloidal formations from micro-organisms, which would otherwise render a wound or surface infected or septic, by keeping the wound free from these micro-organisms, and as this is nearly impossible, to kill or stunt and retard their growth. This is, in other words, merely an observance of nature's law of cleanliness.

The great value of antiseptic and aseptic surgery and gynecology may be seen at once by comparing statistics before and after its introduction, allowing, of course, for a certain increase in operative skill and dexterity.

APHORISMS.

1. Good surgery is aseptic, and therefore antiseptic, surgery.

2. If perfect cleanliness were possible, we would have no need for antiseptics; and antiseptics without cleanliness are of no use; the two must go hand in hand.

3. Asepsis at the first implies attention to detail, and if the surgeon and gynecologist does not watch the minute points he can never become successful in its practice.

4. A mere tyro, but with a good foundation in asepsis and cleanliness, will show better results than a more skillful operator, who pays no attention to detail.

5. Antiseptic dressings are not applications to the wound itself, but to the discharges and to the skin surrounding, rendering them unsuitable for bacterial growth.

6. In changing dressings, which should be as seldom as possible, the wound should be covered while the skin is cleaned and then the wound may be irrigated.

7. If suppuration does occur in a wound it is either due to the operator's sins of omission or commission.

8. If we leave our wound in an aseptic condition and apply proper dressings to prevent the contact and growth of bacteria, we cannot have suppuration.

9. Bacteria require a certain amount of water to develop, and if we can keep our wound surfaces dry, we keep it aseptic.

10. The country doctor can always practice aseptic and antiseptic surgery and gynecology as easily as his city brother who is always near his base of supplies.

11. The surgeon and gynecologist should always carry either a solution of the bichloride of mercury, or the antiseptic tablets, which are perfectly reliable and are made by several good houses; carbolic acid, iodoform, gauze cotton, bandages, nail-brush and soap. Surely these will not burden any one.

12. A convenient way of carrying the bichloride is to make a solution of ʒj to ℥j of alcohol; of this ʒj in a pint of water makes a 1-1000 solution; or you may carry 7½ grains of the salt and 2½ grains of sodium chloride in a capsule; dissolving one in a pint of water also giving a 1-1000 solution.

13. A more condensed way to carry it is to make a solution of 1 1-12 grains of the bichloride in 2 minims of glycerine, with the addition of ¼ grain of sodium chloride. This represents about 1 grain of the sublimate to 2 minims of solution, a small part being thrown down as calomel. Of this 15 drops to the pint make a 1-1000 solution.

14. The bichloride in an acid solution is more efficient as an antiseptic than in a neutral or alkaline one, and therefore it is well to add 5 parts of hydrochloric or tartaric acid to each 1000 parts of solution. This, also, prevents, to some extent, the decomposition of the sublimate, and prevents the formation of the albuminate of mercury, an inert chemical, when brought in contact with the albumen of blood or serum.

15. Carbolic acid should be in pure crystals, of which ʒvi to the pint of water makes a 5 p. c. solution. A little more elegant preparation, and one which has no effect upon polished steel, and at the same time is devoid of the odor and caustic properties of pure carbolic acid, is a mixture of 1 part carbolic acid crystals and 3 parts powdered camphor. A 20 p. c. solution of this has the same germicidal properties as a 5 p. c. carbolic acid.

16. Iodoform may be carried in a tin pepper-box fitted with a lid to prevent spilling; or you may have one made to order. Tiemann & Co. make a rubber iodoform box which is handy and convenient.

17. A solution of equal parts of pot. iodide and the biniodide of mercury, 1 to 4000 strength, is a most valuable antiseptic, being efficient, and can be applied to the skin in a 5 p. c. solution without causing any irritation.

INSTRUMENTS, DRESSINGS AND SPONGES.

18. Instruments should be of the best steel, welded in one piece, or else the handles should be baked on, and instruments of more than one piece, such as forceps, etc., should be provided with patent locks, so we may take them apart and wash and cleanse every crack and crevice; they should be highly polished, preferably nickle-plated, except the cutting edge.

19. The handles should be smooth, with no rough places or notches for the lodgement of dirt and septic matter.

20. Dressings may be bought in the shape of iodoform and bichloride gauze, etc., but they are not satisfactory unless bought and used fresh; and then, they may be made cheaper at home.

21. To prepare the bichloride gauze, take 1 part of sublimate, 2 parts common salt and 500 parts water; the gauze is made of cheese cloth, boiled in water with a little soda, until the grease is taken out. Soak this gauze in the above solution for an hour, and then wring out and partially dry. Put it in a glass jar air-tight, keeping end slightly moist, and it will stay in a good condition for several months.

22. Iodoform gauze is made by mixing ʒ iii of powdered iodoform with ℥ vi of castile soap-suds, making an emulsion; rub this into 2½ yards of gauze, this making a 10 p. c. gauze, which is sufficient; while for a 25 p. c. gauze use ʒ vii of iodoform.

23. The best mode of rendering instruments and dressings sterile is heat. Have a copper cylinder made and fill it about ⅛ full of water; into this place baskets or pans, containing instruments, etc., and provided with legs to raise them above the water. The lid of the cylinder has a manometer, safety-valve and stop cock. This is now closed and the temperature brought to 230° F.

This has the advantage of being perfect in its action, and not altering the instruments, but is hardly practicable outside of hospitals.

24. If the instruments, however, are placed in a pan of water and the water brought to the boiling point and kept there for ten minutes, bacteria are killed and the growth of even the spores is much retarded. To insure boiling of all the water, the pan should be covered. This is probably the best and most practicable method

of rendering instruments aseptic. They should be boiled both before and after an operation.

25. When this is not convenient, a carbolic acid solution of 5 p. c. strength should be used for instruments, it being less corrosive than the bichloride, and does not dull the scissors much. The camphorated carbolic acid is also efficient.

26. Tannin wool is an excellent styptic and antiseptic. To make it, add to distilled water pure tannin until saturated, stirring all the time; then add cotton wool until all the solution is taken up; put into an evaporating jar and dry, and then keep it in a closed jar.

Before using it should be teased out. It may be iodized by adding an ethereal solution of iodine, 1 gr. to ʒ ii, allowing the ether to evaporate.

27. Sponges should be cleansed by either washing them thoroughly with green soap and a 1-1000 bichloride solution, or by the following method:

28. Take new sponges which are freed from sand by beating, and soak them in a 1-1000 solution of potassium permanganate for twenty-four hours. Then, after washing out the permanganate with warm water, immerse them in the following solution until they whiten, but no longer: Take of sodium sulphite 1 part, 1—5 part of a watery solution of either hydrochloric or oxalic acid of a strength 8 parts to 100 and of water 100 parts. Taking them out of this, they should be thoroughly washed in clean running water, and then kept in a carbolic acid 1-20 or bichloride 1-1000 solution, in a close jar until used.

29. Cleaning sponges with a 1—5 solution of sulphurous acid in water, after an operation renders them perfectly white, so you may detect any clots or detritus which may have become enmeshed.

30. Sponges which have been thus prepared are perfectly aseptic, and are cheap. A sponge which will sometimes come handy, is made by taking balls of absorbent cotton of convenient size and tying around them musquito netting. These, soaked in a 1-20 carbolic acid, or 1-1000 bichloride solution, or boiled for ten minutes, are practically aseptic. Half a dozen or more may be kept on hand, and being so cheap, should only be used once.

31. Sutures and ligatures may either be silk, gut, silver or tendon, and should have been rendered aseptic in a 1—20 carbolic acid or 1-1000 bichloride solution, or, in the case of gut, in oil of juniper;

or else they should be soaked or dipped into boiling water for a minute or two just before using.

HANDS.

32. The hands should be thoroughly washed with a nail-brush and soap, preferably one of the antiseptic soaps, of which the biniodide of mercury is the best. Particular attention should be paid to the nails, cleansing the subungual space thoroughly.

33. A 5 p. c. solution of carbolic acid is rather too irritating to use on the hands, and so the following method is recommended: After using the brush and soap, immerse the hands in 80 p. c. alcohol, which removes the oily layer always on the epidermis. By then rinsing them in a 1-1000 bichloride or 1-35 carbolic acid solution, preferably the former, perfect asepsis may be obtained. Instead of the alcohol, ether, iodoform or turpentine may be used.

34. Drains may be of rubber, glass, horse-hair or gut. Bone drains are not safe, as there is some danger of infecting the wound. If certain as to their aseptic condition, they may be used, as they are rapidly absorbed, and so require no removal.

35. For draining cavities, particularly the abdominal, long glass drains should be used, reaching to the bottom of the cavity. By twisting a piece of bichloride or iodoform gauze into a rope and passing it to the bottom of the tube, the other end being lost in the dressing externally, we siphon, as it were, all liquids left behind and exudates. These ropes may be changed, when necessary, without disturbing the tube.

36. The effusion can also be removed by drawing it up with a small syringe, fitted with a piece of rubber tubing—this tubing is passed through the drain to the bottom of the cavity.

37. In an emergency case, common lamp-wicking, impregnated with iodoform, may be used as a drain, particularly when the secretions are small.

38. Drainage tubes should never be used unless there are special indications for them, such as rupture of cysts, unpreventable contact of pus, when we want granulation, etc.

39. In many cases drainage by means of strands of catgut is to be preferred, it being absorbed often before the removal of the first dressing, not interfering, in any way, with asepsis.

40. Drainage tubes should be removed within sixteen to twenty-four hours, unless contraindicated, as their presence prevents primary union, and there is some danger of infection from them.

41. All aseptic effusions are absorbed spontaneously, and are often of use to the system; and aseptic clots usually become organized and transformed into a solid cicatrix.

42. Wound cavities and cases in which we want granulation may be packed with iodoform or bichloride gauze, it being removed when saturated.

43. The site of operation should first be shaved if it has any hair upon it, then cleansed with soap, water and a nail-brush, then wiped off with alcohol, ether, chloroform or turpentine, and then with a 1-1000 bichloride solution—cloths wrung out of the same solution should be laid upon the body covering the proposed line of incision until the operation is commenced.

44. Special care should be taken when the field of operation is in the axilla or nates, as there the pyogenic bacteria most abound.

45. In operations upon the head or face the hair should be entirely covered with a towel wrung out of a 1-1000 bichloride solution. This should be tied on tight to prevent infection in case the operator wishes to move the head.

46. During the operation th ewound should be frequently douched with a 1-2000 or 1-3000 bichloride solution or a 1-50 carbolic acid, and the operator should now and then, particularly before inserting a finger or hand into the wound, dip his hand into the same solution.

47. The spray is not often used, except before operation, to disinfect the air; as the current of air it causes may carry germs into the wound which otherwise would not enter.

48. The assistants should all have undergone a rigid preparation, similar to that of the operator's, and should refrain from touching anything during the operation which would likely infect their hands.

49. Neither the operator nor his assistants should shake hands with new-comers or feel the patient's pulse, unless one wrist has been disinfected for that purpose previously.

50. Putting the hands into pockets, using the handkerchief, etc., should be prohibited.

51. The operator and assistants should, if convenient, wear aprons

perfetcly clean and made of any goods, rubber, etc., and reaching almost to the ankles. This is for their own protection as well as that of the patient.

52. An apron is not a necessity, and is not always convenient, and if the operator is, as he ought to be, cleanly in person, it does not make much difference.

53. In order to obtain an aseptic wound we must have (1) perfect cleanliness of surface with no infection from hands or instruments; (2) perfect coaptation of wound surfaces; (3) sutures strong enough, and so placed as to prevent gaping; (4) rest; (5) position; (6) a certain amount of equable pressure; (7) an even temperature; (8) dryness of wound surface; (9) good drainage, including in this perfect absorption and disinfection of discharges in the dressing; (10) an antiseptic dressing that will prevent entirely the ingress to or contact of, the air, laden with micro-organisms or the causes of putrefactive changes, where they will find a nidus for growth.

54. After the sutures have been properly adjusted and cut, the incision should be dusted with iodoform or boracic acid, as much for their absorbent as for their antiseptic properties.

55. Bichloride or iodoform gauze should be used with profusion in dressing wounds, in order that the discharges máy be perfectly absorbed and disinfected, and that ingress of air may be prevented.

56. In emergency cases, bismuth, freshly roasted and ground coffee, finely pulverized; sawdust medicated with the bichloride or carbolic acid; filter or blotting-paper, soaked in a 2 p. c. solution of bichloride may be used as dressings.

57. Salol, salicylic acid and hydrate of chloral, 2 grs. to ʒ i, make excellent antiseptic fluids when nothing else can be obtained.

58. Turpentine, something always at hand, can be used as an antiseptic by soaking the dressings in it. It prevents the flow of serum and acts as an antiseptic in that way.

59. Varick's method of applying heat is good. After the operation apply heat in the form of cloths wrung out of boiling water to the wound surfaces. This coagulates the albumen and practically forms an impermeable dressing itself. The water must be boiling and close at hand, as merely hot water does no good. After the application the sutures may be adjusted as wished.

60. Peroxide of hydrogen in deep fissures is an excellent antiseptic, oxidizing pus upon contact.

61. Never allow the nurse or others to touch the dressing, unless instructed by you, many cases of suppuration in wounds occurring by infection through curiosity on the part of the patient or meddling by the nurse.

62. Where union by first intention is desired, the dressing should not be removed until the seventh to tenth day, unless special indications arise, when, if you have observed proper care, you may expect to find union and everything in a sweet, clean and aseptic condition. In many cases the first dressing is all that is required.

63. After operations upon cavities it is well to wash them out with either a 5 p. c. solution of common salt or clean, recently boiled water, to remove any excess of bichloride. In cases in which we have no antiseptics at hand, these will answer for douching, irrigation, etc.

64. Under antiseptic precautions we do not fear to attack the brain and skull, the great danger heretofore being septic encephalitis, ostitis, etc.

65. Drainage from the brain may be accomplished either by tubes or by making a counter opening that will drain perfectly.

66. In scalp wounds always shave the head, scrub with a brush and soap, remove all fatty matter with alcohol, ether or turpentine, and then irrigate with a bichloride solution. Never examine the wound until you do this.

67. Loose fragments of bone should be placed in a 1-1000 bichloride solution until needed, and then, after being perforated, should be sutured in place with catgut, leaving small spaces for drainage. Union will almost always take place, and we have the advantage of having a bony, instead of a cicatricial covering to the brain. If we fear to do this, mince the pieces up and dust them upon the surface of the dura mater.

68. In osteotomies, by the observance of strict asepsis and sealing the wound perfectly, we never have suppuration.

69. In compound fractures of bones, cleanse the wound of all dirt, spiculæ, etc., and irrigate with a 1–30 carbolic acid or 1-2000 bichloride solution. Get the wound in good position, either b suture or adhesive strips, and dust with iodoform; cover with iodoform or bichloride gauze and put the part in an immovable dressing. If so treated these wounds seldom require any after attention.

70. Burns should be treated antiseptically as follows: As soon as possible after the injury give the patient a hypodermic injection of morphia and put him under the influence of an anesthetic. Cleanse the burn, and with a stiff brush, soap and bichloride or carbolic acid solution, scrub thoroughly. After this irrigate it well and dust with iodoform or boracic acid. Dress with cotton or gauze as you would any other form of wound. By this method you will have your patient fairly comfortable, or at least free from that excruciating pain so common to extensive burns, in a few hours. Shock is not so pronounced in these cases, and if treated properly they do not slough or suppurate.

71. In old, indolent ulcers the best dressing is antipyrine. It stimulates the granulations. making them take on a new growth, keeps the surfaces perfectly dry and aseptic, something nothing else will do, and the small amount which is absorbed improves the patient's general condition. I have found this especially useful in old chronic ulcers of the leg. Iodoform and boracic acid are also good, but do not equal the antipyrine. The bandage, etc., may be applied according to the skill and taste of the surgeon.

72. In the bladder and urethra, the best way of rendering the mucous membrane aseptic is by a continuous stream of water, preventing in this way the lodgement of any germs. This irrigation should be repeated frequently during operations, or, if possible, should be continuous.

73. Instrumental infection of a healthy woman during a gynecological examination is a danger to which many women have been sacrificed. Be particularly careful in asepsis in these cases.

74. Before making a gynecological examination the gynecologist should cleanse his hands as though he was going into an operation

75. A carbolized vaseline or one of the following ointments are to be preferred as lubricants to lard or commercial vaseline.

76. Vaseline, 30 parts; boric acid, 4 parts; vaseline, 120 parts; biniodide of mercury, 1 part; vaseline, 30 parts; iodoform, finely pulverized, iodol, salol or salicylic acid, 4 parts; vaseline, 30 parts; creasote, 1 part; olive oil, 100 parts; carbolic acid, 10 parts. Either of these make good antiseptic lubricants.

77. Instruments, speculæ, sounds, etc., should receive scrupulous attention in cleansing, and should be immersed in a carbolic acid or bichloride solution.

78. The vagina should always be wiped out previous to examination with a wad of cotton soaked in a carbolic acid solution, and before an operation should be irrigated with the same fluid.

79. After operation the vagina should be irrigated thoroughly and the wound surfaces dusted with iodoform; then an antiseptic tampon should be introduced to absorb the discharges, but should be removed early.

80. Boro-glyceride, 20 to 50 p. c., is an efficient antiseptic, and for use on tampons is to be preferred to anything.

81. In the eye, calomel is the most efficient dry antiseptic we have, and may be used *ad libitum.* The fluid antiseptics should be the same as elsewhere, possibly a little weaker.

82. In gonorrhœa the ol. gaultheria is of great service, being an antiseptic and apparently having some specific action upon the gonococcus. It should be given internally.

83. Irrigation with a 1-5000 to 1-20,000 bichloride solution should be used in the treatment of gonorrhœa.

84. In gonorrhœa in women, cleanse the vagina and vulva with a 1-10,000 bichloride solution, and then rub the mucous membrane with a pledget of cotton soaked in a 1-100 solution of the same. This is to remove the superficial layer of epithelium which contains the gonococcus. Dust the vagina and vulva with iodoform and pack the vagina with iodoform gauze. This gauze is to be removed every four or five days and the vagina irrigated with a 1-2000 bichloride solution and the gauze renewed. After the third or fourth removal the gauze is omitted and the vagina irrigated every day for two weeks with the bichloride solution. This must be thoroughly done to succeed.

85. In gonorrhœal arthritis, after cleansing the surface properly, a trocar, disinfected, should be inserted and the fluid drawn off. The joint should then be irrigated with a 1-2000 bichloride or 1–30 carbolic acid solution until the fluid returns free from blood or pus; close the puncture with iodoform or bichloride gauze and adhesive strips, and in ten or twelve days begin passive motion.

86. In purulent otorrhœa, the ear should be washed out with a 1-1000 bichloride or 1–30 carbolic acid solution, then dried, and then iodoform or boracic acid insufflated.

87. In preparing a room for operations the floor and walls should be stripped of carpets, hangings, etc., and scrubbed with soap,

brush and a 1-500 bichloride solution. After drying, the windows and doors should be closed tight and two to four pounds of sulphur ignited and left to burn for twenty-four hours. After airing, the room will be almost aseptic; but if possible a coat of whitewash will assist. In many cases stripping the floor and walls and burning the sulphur will have to suffice.

The following tables give the names of some of the more prominent users of antiseptics and their preferences, and the germicidal power of various antiseptics:

Surgeon.	Locality.	Antiseptics.
Mitchell Banks,	Liverpool,	Sublimate and carbolic acid spray.
Whitehead,	Manchester,	Carbolic spray.
McEwen,	Glasgow,	Strict antisepsis.
Ogston,	Aberdeen,	Carbolic acid.
Keith,	Edinburgh,	"
Annandale,	"	Sublimate.
Péan,	Paris,	"
Lücke,	Strasburg,	"
Koeberlé,	"	Alcohol flame, boiled artificial sponges and carbolic acid.
Czerny,	Heidelberg,	Sublimate.
König,	Göttinger,	Sublimate and iodoform.
Volkmann,	Halle,	"
Gussenbauer,	Prague,	Sublimate.
Nussbaum,	Munich,	"
Winkel,	"	"
Krönlein,	Zurich,	"
Koche.	Berne,	"
Billroth,	Vienna,	Sublimate and iodoform.
Albert,	"	"
Julliard,	Geneva,	Carbolic acid.
Terrier,	Paris,	Sublimate and carbolic acid.
Championnière,	Paris,	"

Surgeon.	Locality.	Antiseptics.
Bergmann,	Berlin,	Heat, sublimate and iodoform.
Hahn,	Berlin,	Sublimate and iodoform.
Esmarch,	Kiel,	“
Schede,	Hamburg,	Sublimate.
Wieth,	New York,	Sublimate, iodoform carbolic acid.
Weir,	“	Heat, sublimate and iodoform.

TABLE II.

Antiseptic.	Strength.	Duration of exposure to kill germs.
Corrosive sublimate,	1-500,	10 seconds.
“ “	1-1000,	45 “
“ “	1-2000,	1⅛ minutes.
“ “	1-5000,	3 “
“ “	1-10,000,	5 “
“ “	1-20,000,	12-15 “
Biniodide of mercury,	1-40,000,	4 days.
Nitrate of silver,	1-10,	4 seconds.
“ “	1-50,	8 “
“ “	1-100,	12 “
“ “	1-500,	1½ minutes.
Carbolic acid,	1-20,	15 seconds.
“ “	1-40,	30-60 “
“ “	1-60,	4 minutes.
Alcohol—no effect upon dried germs; very powerful in moistened condition.		
“	95	20-30 seconds.
“	66	10-15 minutes.
“	absolute,	4-12 minutes.
Salicylic acid makes a stable solution,	1-600,	1 minute.
“ “	1-1000,	4-5 minutes.
Permanganate of potash,	1-50,	20 seconds.
“ “	1-100,	1 minute.

Antiseptic.	Strength.	Duration of exposure to kill germs.
Permanganate of potash,	1-2000,	5 minutes.
Chlorine water (unstable),		1-1½ minutes.
Hydrogen bromide, "		1-1½ "
Boric acid—no effect in ten days exposure.		
Iodine to saturation had no effect in forty-eight hours.		
Chloride of zinc,	1-20,	No effect.
Oil turpentine,		"
Thymol,		"
Eucolyptol,		"
Iodoform—retarded growth only after twelve hours.		
Iodol, bismuth and boric acid, in powder, no effect.		
Boiling water, from 165.2° F. to 212° F., destroyed germs on contact, as did dry heat at same temperature.		

ON THE TREATMENT OF URINARY LITHIASIS.

By Professor Dujardin Beaumetz, Physician to Cochin Hospital, Paris, France.

(Advance sheets of a work on the "Modern Treatment of Diseases of the Kidney," to be published by G. S. Davis, Detroit, Mich., as part of the Leisure Library series. Translated by E. P. Hurd, M.D.

Summary:—Urinary Lithiasis—Acid Lithiasis—Alkaline Lithiasis—Uric Gravel—Its Characters—Oxalic Gravel—Phosphatic Gravel—Treatment of Urinary Lithiasis—Etiology of Uric Gravel—Uric Diathesis—Alimentary Causes—Pathogeny of Uric Gravel—Therapeutic Indications—Alkalies, Indications and Doses—Choice of Alkalies—Salts of Potassa—of Lithia—of Soda—Hygienic Treatment—Influence of Diet—Treatmeat of Oxalic Gravel—Causes of Oxalic Gravel—Therapeutic Indications—Ammoniacal Gravel; Causes, Therapeutic Indications.

Gentlemen:—Urinary lithiasis is a common disorder which you will often be called upon to treat. I intend to give particular attention to this subject from the fact that we may, in the great majority of cases, by an appropriate hygienic and medicinal treatment, cause this lithiasis to disappear. I shall divide my lecture into two parts: In the first place I shall take up the treatment of the lithiasis itself, and in the second that of the accidents of which it may be the cause.

In considering the treatment of urinary lithiasis I shall confine myself to the subject of what is called *supra vesical lithiasis;* in a word, I shall not touch upon stone in the bladder, an affection which claims a surgical treatment quite outside of the plan of these lectures. It should be understood, also, that under the name *lithiasis* I do not comprehend the solid deposits of the urine, and what Bouchardat calls *urine dust.* These deposits of solid particles and this "urine dust" are only produced after cooling of the urine, while, on the contrary, in urinary lithiasis, the solid particles are formed in some part of the urinary passages before the urine is voided.

You know that authorities have divided lithiasis into different groups, according to the size of the solid particles contained in the urine, and that they have described as sand, gravel and calculi deposits whose component parts are of varying dimensions. This classification presents little interest from a therapeutic point of view; it is not so, however, with the division which is based on the nature of the lithiasis. You will see, in fact, that the cure of the affection depends on the exact knowledge of the nature of the calculi and in the adaptation of a special treatment to each of those varieties. So, whenever a patient comes under your care for renal lithiasis, you ought, first of all, to ascertain the chemical nature of this lithiasis, and to attain this end you will have recourse to chemical tests and to microscopic examinations; these tests are very simple and the microscopic examination easy:

The history of urinary concretions goes back to the most remote antiquity, but among the ancients stone in the bladder was much better known than renal lithiasis.

Hippocrates speaks of the action of calcareous waters and of stagnation of the urine as causes of gravel.

Galen carefully describes renal lithiasis; he speaks of nephritic colic, and counsels two kinds of treatment: abundant ingestion of water for lithiasis, and blood-lettings for nephritic colic.

Aretæus, who also gives a complete description of lithiasis, insists that if medicines may have a solvent action on the small concretions, they remain without any effect on vesical calculi of considerable volume.

Sydenham, Baglivi, Morgagni, Hoffmann, Boerhaave and Van Swieten describe urinary lithiasis and vaunt the utility of alkalies.

In 1776 began the chemical studies on lithiasis. Scheele discovered lithic (uric) acid in calculi. Bergmann found phosphate of lime. Wollaston completed these researches by finding cystic-oxide and ammoniaco-magnesian-phosphate. Marcet discovered calculi of xanthine. Lastly, in 1819, Brugnatelli summed up all these facts in a remarkable treatise.

The modern epoch begins with the labors of Proust, Magendie, and the remarkable treatises of Civiale in 1838, and of Rayer in 1841.

When we take a general view of the nature of calculi, we see that some of them in acid urine, others in alkaline; hence the names acid lithiasis and alkaline lithiasis. In both cases the lithiasis may be constituted by products found normally in the urine, or by substances introduced there accidentally, or which have developed pathologically; hence the subdivision of lithiasis into normal and abnormal.

In acid urine we have as normal lithiasis uric gravel, and as abnormal, lithiasis oxalic gravel. In alkaline urine we find as normal lithiasis calcareous gravel, and as abnormal, ammoniacal gravel.

Let us then begin the study of urine containing calculi by testing the reaction of this liquid, and by the sole fact of the latter being alkaline or acid, we shall be able to make a first distinction.

Is the urine acid? You will have to examine if it be a case of uric or oxalic gravel, and here the microscope and the chemical reactions will enable you easily to arrive at the diagnosis.

Uric gravel, which is much the most common kind, is constituted by a reddish brick-dust sediment, such as you will often find in the urine of individuals who have passed their fortieth year; and which is very often seen in the urine of the arthritic. Examine this brick-dust precipitate under the microscope, and it will appear to you under the form of crystals resembling a whet-stone, of a characteristic reddish-yellow or orange tint.

In other cases the forms are more variable, and you have before you odd crystals, lance-shaped or in the form of rosettes, daggers, halberts, canine teeth, nails or spines. As for their chemical reaction, it suffices to touch these calculi with a little nitric acid, and to add a drop of ammonia, and you obtain a magnificent purple color from formation of murexide.*

Quite different is oxalic gravel, which presents itself under the form of fine sand, of a bluish-gray, and not red color. If you examine this sand under the microscope, it is no longer the appearance of a whetstone or lozenge, but that of a star, or rather of a closed envelope, which is presented by these crystals of oxalate of lime which constitute oxalic gravel.

Here you no longer get the violet coloration by nitric acid and

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*Uric acid $C^2H^4N_4O^3$ is, like urea, an azotized substance; it exists in urine chiefly in the state of an alkaline urate, and is deposited when the urine is cold, under the form of crystals of a reddish-yellow or bright red color. These crystals resemble rectangular prisms, lozenges, whet-stones, etc., sometimes several crystals are grouped together and form stars of rosettes. Uric acid is feebly acid; it does not redden litmus; insoluble in alcohol and ether. In fact, in order to dissolve one part of uric acid, you need 15,000 parts of cold water and 18,000 of boiling water; it dissolves wholly without decomposition in concentrated sulphuric acid. It is precipitated from its solutions by acetate of lead. Heated in a test-tube, it gives rise to urea, cyanuric acid, hydrocyanuric acid, carbonate of ammonia and alloxan. Treated by concentrated nitric acid, uric acid breaks up into urea and alloxan. The latter, under the influence of a few drops of ammonia, or even of ammoniacal vapors, turns to a reddish-purple color (purpurate of ammonia), which, by the addition of caustic potash, becomes bluish-purple.

The murexide observed by Scheele, studied and designated by Proust under the name of purpurate of ammonia, crystallizes in quadrangular prisms, or in tables which are green by reflected, and red by transmitted, light. These crystals, which contain a molecule of water, give those magnificent metallic reflections which the wings of cantharides display; they dissolve in water with a rich purple color.

The following table, giving the results of analysis of 1,000 cases of urinary lithiasis, shows the relative frequency of each kind:

Uric acids or urates	372
Phosphatic gravel	263
Lithiasis of a complex nature	233
Oxalate of lime	232
Total	1000

A propos of the age of calculous patients, statistics have been estabammonia, but if you add sulphuric acid and raise the temperature, gases will be liberated, consisting of carbonic acid and carbonic oxide. So much for the acid urines.

Does the urine present an alkaline reaction? The sediment is almost always ammoniacal, and constituted by calculi of ammoniaco-magnesian phosphate presenting themselves to the microscope under their characteristic coffin-shaped crystals. You will also sometimes find a calcareous lithiasis in alkaline urines formed by amorphous strata of tribasic phosphate or carbonate of lime.

The ammoniaco-magnesian phosphates $({}_{2}\mathrm{Mgo}, \mathrm{NH}_4\mathrm{PO}^5+{}_{12}\mathrm{H}_2\mathrm{O})$ crystallize in voluminous prisms with rhomboidal base, when you examine them after their natural deposition in ammoniacal urine. In acid urine and in fresh urine the phosphates do not form a precipitate; to obtain such precipitate in fresh urine you have to add several drops of ammonia; in these cases the crystals no longer present themselves under the form of rhomboidal prisms, but they take on the aspect of needles, stars and arborizations.

The ammoniaco-magnesian phosphate is insoluble in water and ammonia; it is precipitated from its solutions by the alkalies and ammonia; it is soluble in acetic acid and in the mineral acids.

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lished bearing upon the frequency and nature of these affections at different periods of life.

As for the relative frequency, these are the results of a study of Civiale of 5,376 cases:

From 1 to 10 years of age	1946
From 10 to 20 years of age	964
From 20 to 30 years of age	460
From 30 to 40 years of age	340
From 40 to 50 years of age	391
From 50 to 60 years of age	518
From 60 to 70 years of age	577
From 70 to 80 years of age	199
Above 80 years of age	17

As for the nature of the calculi, the following variations have been noted according to the age of the subjects:

1. In infancy and adolescence there is predominance of oxalate of lime calculi, sometimes associated with the carbonate.
2. In adult age, calculi of uric acid and urates predominate.
3. In old age, we oftener observe calculi formed of the earthy phosphates and carbonates.

Lastly, to complete the subject, I may tell you that there exists an indifferent lithiasis characterized by calculi of an extreme rarity, and which I will only mention, namely, cystic gravel constituted by cystine and xanthic gravel.

Cystine ($C3H_5$ N So_2) is found in urine ordinarily in the state of a sediment mingled with urate of soda, or under the form of a calculus. It was discovered by Wollaston in 1805.

The crystals of cystine appear in the form of six-sided lamellæ. Deposits of cystine are insoluble in the warm urine or in warm water; they are dissolved by ammonia, and if the ammoniacal solution be allowed to evaporate, the six-sided crystals are again deposited. To differentiate them from uric acid, treat them with some mineral acid, which dissolves cystine, while leaving uric acid crystals intact. Treated by HCl, zinc or tin, cystine gives off sulphuretted hydrogen.

Xanthine ($C_5H_4N_4O_2$), discovered by Proust, is a rare form of urinary calculus. When dry, it forms an amorphous, yellowish white powder, very sparingly soluble in cold water, rather more freely in hot water. If dissolved in nitric acid, and the solution evaporated by heat, xanthine leaves a yellow residue which assumes a reddish yellow color on contact with potassium hydrate solution, and this, when heated, turns violet red.

When you have ascertained the nature of the lithiasis, you can institute a treatment which shall, on the one hand, be directed to the cause, and on the other, to the removal of the gravel; and you will see that, according to the kind of deposit, the management of the case will be different. Let us, then, examine successively from this point of view, uric gravel, then oxalic and phosphatic gravel.

Three great causes: diathetic, dietetic and renal, favor the formation of uric gravel.

1. The uric diathesis, what Bouchardat calls the *polyuric* diathesis, is a frequent affection which often serves as a basis for the development of gout; and if there may be uric gravel without gout, it is impossible to have the latter without uric gravel; we see even the children of gouty patients subjects of this gravel, which is also a morbid complication in most athritic complaints.

2. The alimentary causes of uric lithiasis have been long known. Results of the incomplete combustion of azotized matters, uric acid shows itself whenever the diet is too rich in albuminoid matters, or, to be more precise, whenever the diet is not proportioned to the

work and to the combustions of the economy; in a word, uric lithiasis is the gravel of the rich man and the citizen. Already in my lectures on regimen (Diseases of the Stomach and Intestines• Part 1. Am. Ed.) I have shown you the evils of a diet too largely azotized, and among these evils I have given the first place to the uric diathesis.*

3. As for the local diseases of the kidney, they may, by a mechanism which I shall soon explain, become the point of departure of gravel.

When we come to study the intimate mechanism of the three causes above given, we find difficulties of a serious nature, and I ought here to enter into certain explanations.

It was once thought that in order for uric acid gravel to be brought about, it was necessary simply that the uric acid should be in greater quantity than it ought to be in the blood, as this increase would manifest itself by an augmentation of the uric acid in the urine; at the same time, if in the immense majority of cases we note this increase of uric acid in the blood of calculous patients, the fact is far from being a constant one, and Garrod and Beale have reported observations in which there was rather diminution than increase in the quantity of uric acid in the circulation.

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*The causes of the uric diathesis are the following: An excessive nitrogenized diet and the abuse of fatty food and of sweets; (2) the prolonged use of alcohol and of certain wines, in particular of the effervescent wines, as well as of strong beer; (3) a sedentary life and insufficient exercise, overwork of mind, mental emotions and grief; (4) the suppression or the diminution of the cutaneous functions; (5) dyspepsia, which may result from the uric diathesis, but which also may augment the production of uric acid; and, according to Lasegue, it is almost always in a trouble of the digestive functions that we find the cause of the superabundance of uric acid in the economy; (6) heredity.

Bouchardat has established a division of urinary lithiasis according to the social position of individuals who are affected thereby.

1. In the peasant you frequently observe calculi of oxalate of lime.
2. In the rich inhabitants of cities, given to good cheer and to idleness, calculi of uric acid predominate.
3. In rich or poor people, who make an abuse of venereal pleasures, you are very likely to find calculi of earthy phosphates, and this results from the frequency of affections of the urinary passages in these patients.

Hence physiological chemists have alleged another reason, and have said that it was sufficient that the blood should contain certain substances which opposed the solution of uric acid, to see the latter pass immediately into the urine, although there might not be any increase in uric productión. This chemical explanation has been chiefly supported by Voit, who was the first to point out the fact that uric acid, being little or not at all soluble in a solution of acid phosphates, when the latter are in excess in the blood, they determine the appearance of this kind of gravel. Alcohol acts in the same way, uric acid not being soluble in alcoholic solutions. We might demand if we may not find in this very fact an explanation of the uric diathesis, and of the gout which is met with in certain kinds of poisoning, in lead poisoning, for instance. These are very important facts, which I pray you to keep in mind; they even go to show that when we have to do with the dietary of persons who are the subjects of gravel, we should proscribe alcohol and too acid fruits.

This chemical explanation of uric gravel is not the only one which has been given; authorities have also spoken of certain functional troubles on the part of the kidney. They have pretended that when the urine contains less than the normal quantity of water, it thereby presents a favorable condition for the uric diathesis. It has also been affirmed that certain functional disturbances taking place—according to the prevailing theories of urination, whether in the Malpighian glomerules, or in the tubuli contorti, have for their consequence a more free elimination of uric acid. Lastly, the presence of mucus in the urine, in determining the production by fermentation of lactic acid, augments the acidity of the urine, and in this way favors the precipitation of uric acid.

To sum up, from a therapeutic point of view, we have in uric gravel two great indications to fulfill: that of diminishing the acidity of the urine, and of augmenting the quantity of water therewith excreted.

To diminish the acidity of the urine, we should employ alkalies, and this method, which has been in use, empirically, since the 15th century, is the only one which can give good results, and if writers have disputed the value of the alkaline treatment of lithiasis, it is because they have forgotten the important point to discriminate the kind of gravel which they had to treat. Heroic and curative medicaments in the treatment of uric gravel alkalies have deplorable effects when administered for alkaline gravel, and this is why some of the old authorities maintained that in certain cases the alkaline treatment is more injurious than useful in lithiasis.*

What alkalies should you choose? What doses should you give, and how should they be administered? These are important points to discuss, and thanks to the experiments of Roberts, we are able to respond categorically to each of these questions. Roberts submitted calculi of uric acid to the action of alkaline solutions more or less concentrated, and ascertained by weighing, the quantity of the calculus dissolved in a given time. He demonstrated this capital fact, that a calculus of uric acid does not dissolve in an alkaline menstruum in the ratio of the strength of the latter. When the alkaline medium contains too large a proportion of the alkali, it has no solvent action on the uric acid. There forms, in fact, under these circumstances around the calculus a layer of biurate of sodium which prevents the solvent action of the alkali; while, on the contrary, when the alkaline solution is weak, the calculus dissolves with greater activity. These are facts of the utmost importance, showing that it is in moderate and rather feeble doses that you should administer the alkalies. Roberts made also a curious experiment from which we can draw a lesson; he placed a quantity of uric acid of a given weight in an alkaline solution of definite strength, and then reckoned what the uric acid had lost in weight without any movement being imparted to the mixture; then, with a solution of the same strength and volume, which he took care to let fall by constant dropping upon the uric acid, he ascertained the solvent action of this new solution, which proved to be very much greater than in the previous instance (when the calculus was acted upon in a still liquid), and when the flow was so slow that the alkaline solution fell drop by drop upon the gravel, the solvent action attained its maximum of intensity.*

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*It was Basil Valentine, a chemist of the 15th century, who first prescribed the alkaline carbonates. One of the most vaunted remedies for urinary concretions was that of Lady Stephens. The British Parliament, in 1739, bought this prescription for a large sum of money. The Academy of Sciences in France published a report on this remedy, and Morand, referee, showed that it was composed of egg-shells, of soap, of burned snails, of a decoction of chamomile flowers, of fennel and of parsley. At the same epoch the medical profession was making earnest trials with alkalies, and in particular with carbonate of soda, in the treatment of stone, and the Vichy waters began to have a considerable reputation in calculous effections. But it was not till after the labors of Magendie, and the report of Charles Petit to the Academy of Sciences in 1829, that the question really became scientifically settled.

What are we to conclude from these facts? We have a right to infer that, in order to obtain the solution of uric gravel, we should both dilute well our doses and give them at short intervals, so that the urine shall be constantly impregnated with these alkaline principles, and thus maintain a continuous solvent action on the calculus.

You understand, of course, that I am speaking only of the possibility of the solution of uric gravel; when the stone is formed in the bladder the result is much more doubtful, and notwithstanding the curious facts signalized by Debout, and still more recently by Constantin Paul, of the spontaneous fragmentation of stones in the bladder, I believe we cannot count on lithontriptic medication—if there be any such—to attain this end.

What is the alkali to which we should give our preference? In England practitioners administer potassa and lithia; in France, we prefer soda. We will consider these in their order. In England, they give the citrate, acetate and carbonate of potassa; the English physicians affirm that uric acid is more soluble in potassa than in soda, and Roberts counsels the *liquor potassæ* of the English pharmacopœia, and especially the citrate of potassa, in the dose of 12 to 16 grammes per day, taken in divided doses every three hours.†

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*Roberts observed, on immersing calculi of uric acid in solutions of potassa, that 12 grammes of potassium carbonate in a pint of water are without effect upon the calculi, and it is the same with eight grammes.

Six grammes per pint dissolve 3 per cent. of a calculus per day; 3 grammes dissolve 20 per cent.; 1.50 grammes 11.9 per cent.; 0.50 gr. 6.05 per cent., etc.

Roberts, in another series of experiments, noted that in twenty-four hours 1.50 gr. of carbonate of potash dissolved in a pint of water had upon a calculus of uric acid the following action: 45 pints without flow dissolve 13 per cent. of the calculus; 8 pints with continuous flow, 10 per cent.; 4 pints with continuous flow, 9 per cent.; 2 pints flowing drop by drop, dissolved 17 per cent. of the calculus.

†Citric acid is tribastic, its formula being $C_{12}H^{5}O^{11}3KO$, it is made (U. S. and B. P.) by saturating potassium bicarbonate with citric acid.

If you adopt the English treatment, I advise you to employ the following potion:

Citrate of potash, 12 to 15 grammes.
Infusion of arenaria rubra, 90 grammes.
Syrup of 5 roots, 30 grammes.

[May be replaced in American practice by the following:

℞—Pot. citratis, ℥ss.
Syr. scillæ, ℥i.
Infus. scoparii, ℥v.

M. Sig.—A tablespoonful 3 or 4 times a day.]

For my part I am not very partial to potassa as a medicament for habitual use. The salts of potash are very active, and I have already told you, when speaking of purgatives, the great difference which exists between the potassium and the sodium salts in their

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The dose is from 20 to 25 grains. The liquor pot. cit. is officinal; dose an ounce and a half to two ounces.

Potassæ acetas (acetate of potassa) is made by saturating bicarbonate of potassa with acetic acid. It is a white salt, neutral to test paper, of warm pungent saline taste. Has been called *foleated earth of tartar.* It is very soluble in water and is deliquescent. It is diuretic in the dose of a scruple to a drachm; in the dose of two drachms to three drachms it is purgative. For a diuretic effect it should be largely diluted.

Potassæ carbonas (carbonate of potassa) is obtained from crude pearlash by purification, or from cream of tartar by incineration. It is a coarse, granular, white powder, with nauseous, caustic, alkaline taste, very soluble in water, insoluble in alcohol. The dose is from 10 to 30 grains largely diluted.

Liquor potassæ.—(For mode of preparation see U. S. P.) The dose is from 10 to 30 minims, very largely diluted in sweetened water or some mucilaginous fluid (infus. aurantii cort. is a good menstruum.)

Lithia is a white crystalline substance of caustic taste. (For mode of preparation of lithia and its carbonate, see U. S. P.) The carbonate is the salt generally employed. It is a light, white powder, which is but little soluble in water. It may be associated with carbonate or citrate of potassa. The dose of carbonate of lithia is 3 to 6 grains, which may be taken in carbonic acid water. The *citrate of lithia* is an eligible salt, which is less disagreeable than the carbonate; the dose is from 5 to 10 grains.

effects on the economy. This difference exists throughout the entire series of the potassium salts as compared with those of sodium, the first having a manifest depressant effect on the economy. Bouchard has long insisted on the toxicity of potash, which he says is 60 times greater than that of soda; as this toxic action manifests itself in cases of renal insufficiency, you understand the dangers which may attend the use of the potassium salts in the treatment of urinary lithiasis. Hence, I much prefer lithia to potassa, and were it not for the high price of this base, it would be likely, in my judgment, to supersede the other alkalies in the treatment of uric lithiasis.

Lithia is given in the form of carbonate or citrate, in doses of from 3–5 grains three times a day. I think that you should not exceed the latter dose, and I cannot endorse Charcot's method, who gives as much as 30 grains of lithia in the twenty-four hours; given in such doses, the lithia salts are sure, in a little while, to bring on fatigue of the stomach and digestive troubles.

The carbonate of lithia has this important peculiarity, that it is soluble only in carbonic acid solutions. Hence, in administering it, you will have to stir your dose of lithium carbonate into a little artificial soda or Seltzer water, or some one of the natural gaseous waters. A good way is to give your lithia salt in a glass of water along with the ordinary effervescent powders of sodic bicarb. and tartaric acid; in this way you give your patient a combination of lithia and soda. You can also make use of the granular effervescent salts of carbonate or citrate of lithia, or the syrup of lithia made according to Duquesnel's formula.

Soda, if it does not possess all the energetic effects of lithia, presents nevertheless an advantage that it is of moderate price. We generally order either the bicarbonate of soda in substance, or the sodic-bicarbonate waters. An excellent method is the administration of effervescent powders, of which one contains one drachm of bicarbonate of sodium, the other a scruple of tartaric acid.

The bicarbonate of soda is given in solution in the dose of two to three grammes a day, but the usage of the natural alkaline waters is much to be preferred. Choose especially (and here you can fall back on the experiments of Roberts as the basis of your treatment) mineral waters containing a feeble quantity of sodium bicarbonate, 2 to 3 grammes to the litre, and among the Vals waters prescribe Saint Jean, and among the Vichy waters, the springs of Hauterive, of Celestins, and of Saint-Yorre. To these spas you may join Boulon, Velleron and Chaudes-Aigues, in France, Ems in Germany, and Bilin in Bohemia.

Bouchardat recommends that these waters shall be taken with light white wines, sometimes slightly acid, such as are obtained from the the centre of France. These light wines, when diluted with the alkaline water, constitute a very agreeable beverage, presenting this great advantage, that the combination of the two forms a real tartarate of potash and of soda, which has a favorable action from the point of view of the solution and expulsion of the uric gravel.

Has this alkaline treatment, to which we give the first place in the therapeutics of uric gravel, any evils as well as advantages?

It has been asserted that the prolonged usage of alkaline waters has an injurious action on the blood, and particularly on the red blood corpuscles, and that anæmia is the inevitable consequence of this kind of treatment. Trousseau is mainly responsible for having created in its entirety the alkaline cachexia, which he believed to be the result or the *deglobulizing action of alkalies.* Since Trousseau's time the experimental method has been perfected, and we may to-day affirm that alkalies are rather medicaments favoring and regulating nutrition than enfeebling to the organism.

Coignard had already shown us that alkalies augment and improve the combustions of the economy, but it is chiefly to the remarkable experiments of Hyades and Martin Damourette that we owe the scientific demonstration of the favorable action of these medicaments on nutrition. Lastly, the researches of Pupier and Lalaubie, who have always noticed under the influence of alkaline waters an augmentation of the globular richness in the anæmic, show us that there is little foundation for this bugbear of the alkaline cachexia, which is based rather on theoretical and preconceived notions, than on clinical and experimental facts rigorously observed.

Trousseau described an alkaline cachexia similar to what is observed after the long administration of iodine and the mercurials. It is, he said, characterized by emaciation, pallor, a general bloated appearance, passive hæmorrhages and serous effusions. This cachexia was based on the deglobulizing influence of the alkalies. According to Gubler this baneful action is due to the fact that while the salts of soda abound in the serum, salts of potash predominate in the corpuscles; if you augment in too great quantity this soda in the serum, the globules lose their potassa, and in consequence their hæmatic properties. Climent had even found, by Malassez's system of enumeration, a notable diminution of the globules under the influence of alkalies, and Rabuteau had maintained that the alkalies notably diminish the figure of urea-production.

All these facts have been taken up anew, and it appears to be demonstrated that if, as Lomikowsky has done, we may determine in dogs, like those to which he administered daily and for a long time half an ounce to two ounces of bicarbonate of soda, accidents of a grave kind, and in particular very intense digestive troubles, in man, on the contrary, you always augment the figure of urea as well as that of the globules, and the experiments of Mialhe, of Coignard, and others mentioned above, seem in this respect to be absolutely demonstrative. Alkalies, then, act in therapeutic doses as excitants and regulators of nutrition, whether through their influence on the nervous system or some unknown cause.

While recognizing the fact that the alkaline cachexia is largely a myth, it must be admitted, nevertheless, that when abuse is made of the alkaline waters, and in particular of the alkaline salts, there may supervene a notable fatigue of the stomach, and in this respect there is a very marked advantage in the use of the natural over the artificial mineral waters. The first are tolerated, even in large doses, without provoking any digestive troubles, the alkaline solutions are, however, as I have just told you, painful and fatiguing to the stomach.

The facts which I have just stated also show you that it is a mistake to suppose that the alkalies act chiefly by neutralizing uric acid. Their favorable action in the treatment of uric lithiasis has quite a different origin. Alkalies act, as Basham and Harley and other authorities above mentioned have shown, by energizing the phenomena of oxidization of the economy, and thence aiding the transformation of uric acid into urea.

To the sodii-bicarbonate waters, you may add certain waters of the Pyrenees, as Laprest, Molitg, Olette, and especially Capvern, which have a real action in the treatment of uric gravel.

You have fulfilled the first indication by alkalies, i. e., you have done what you can to oppose the excessive acidity of the urine, you must fulfill the second indication, namely, to hasten and favor the expulsion of the gravelly deposits. You will attain this end by employing the diuretics furnished by the mineral waters, or by the pharmaceutical preparations. Here you will witness the triumph of the waters of Pougues, Vittel, Evian, Contrexville, and of all those waters of uncertain mineralization which do not contain any special principle which characterizes them, but which act chiefly by their mass. You may also recommend the silicious and lithiated waters, like those of Evaux and Sail les Bains, which have a very energetic diuretic action.

To these mineral waters you may add the action of certain medicaments. You may draw freely from the great group of diuretics spoken of in a previous lecture. The vegetable diuretics may here serve you a good purpose, and in particular the Arenaria rubra, the diuretic action of which has been lately so much extolled, or the Stigmata of maize, which has so recently come into vogue:

Arenaria rubra (red sandwort) is obtained from the shores of Algeria. The decoction (1 ounce to the Oij) is an excellent diuretic, and may be freely taken for this purpose.

Stigmata of maize (corn-silk) has lately come into use in this country, though long employed in Mexico. An ounce of the corn-silk to a pint of hot water makes a good infusion which may be freely drank. There is a fluid extract which is much in use; dose, a teaspoonful 3 or 4 times a day.

By the side of these alkaline and diuretic medicines we must place a medicament whose action is quite different, and which has the property of transforming into hippuric acid and soluble hippurates the insoluble uric acid and urates; I allude to benzoic acid, or rather the benzoate of soda, which is administered in the dose of 2 to 3 grammes a day, alone, or associated with acid phosphate of soda.

But these medicines must yield the palm to the hygienic treatment; this it is that dominates the therapeutics of uric lithiasis, because addressed to the very cause of the gravel. You should, then, bestow all your care in regulating the diet of your lithæmic patients, and the diet should be made to correspond to the exercise taken. Food too rich and too stimulating should be forbidden; the dark meats, and especially game, should be eschewed, and the alcohols should be proscribed; we have, in fact, seen that the latter leads to the precipitation of uric acid in the urine.

Make your patients adopt a mixed diet, i. e., meat and vegetables in about equal quantities. Prescribe exercise, which is such a powerful promotor of the interstitial combustions of azotized matters; require the patient to take long walks, practice gymnastics, and the more sedentary the life of your patient, the more active should be these forced exercises. Bouchardat has traced with the hand of a master the principal hygienic indications applicable to the uric diathesis, and I cannot do better than refer you to what he has said under this head :

Under the head of diet, Bouchardat advises to eat moderately; cut the food finely with the knife; masticate thoroughly.

Abstain from sorrel and tomatoes, from asparagus, and green beans, if their usage causes renal pain or slight deposits in the urine.

Meats of all kinds agree, but they should be used moderately. Be chary in the use of eggs, fish, cray fishes, shrimps, lobsters, shell fishes and old cheese; milk is often useful.

Almost all the vegetables of the season agree and should make part of the daily fare; spinach, lettuce, chiccory, artichokes, cucumbers, salsify, cardoons, celery, carrots, turnips, sweet potatoes. Potatoes are useful, and ought in part to take the place of bread. Radishes may be eaten freely; cabbages, cauliflowers, sour-krout, mushrooms, truffles, chestnuts, peanuts, filberts, beans, peas, lentils with moderation. Cresses, greens and lettuce should be freely indulged. All the fruits, if the stomach bear them well; strawberries, raspberries, peaches, bananas, apples, grapes, currants, cherries, pears, prunes, plums, pumpkins, cucumbers, are advantageous, and should be made a part of the daily fare. Olives, almonds and nuts of all kinds should be sparingly eaten. Chocolate may be allowed for a drink, and coffee, if it be found to be diuretic. Prohibit brandy and all other spirituous liquors, as well as beer. The only alcoholic beverage allowed is a light red or white wine, diluted with twice its volume of water. The effervescent wines are contraindicated, as well as water highly charged with gas, like the seltzer.

Take on waking, on going to bed, and at meals, enough liquid of some kind, so as to pass about a quart and a third of urine in the twenty four hours.

These aqueous drinks should be: pure water, Vals (St. Jean) water, decoctions of couch grass, cherry tops, ash leaves, linseed, or, better still, a quart of water in which is dissolved one or two teaspoonfuls of Rochelle salts.

Under the head of excretions, he urges the importance of regularly and completely emptying the bladder every six hours at least. A good walk after each meal, and efforts at defecation will help the patient fo accomplish free urination.

At least one full stool every day is necessary. If any laxative is needed, one or two teaspoonfuls of white mustard seed or flax seed along with the breakfast may answer the purpose. Or, if this fails, from a teaspoonful to a tablespoonful of Rochelle salts in a glass of lemonade may be taken the first thing in the morning.

Under the head of *exercise* Bouchardat urges the importance of gymnastics and other physical exercise that shall call forth all the forces. All chilling of the body not followed by reaction is to be avoided. Any exercise (as of the arms) that augments pulmonary expansion is good. Parlor gymnasiums (apparatus provided with elastic cords) exercise well the thoracic muscles and expand the lungs. Dum bells will do, in default of anything better. Wood-sawing and chopping are especially to be recommended, and whatever exercise the patient takes should be sufficiently vigorous to provoke sweating. Then the patient should have a good rub down, and change his clothes. Active exercise is the most efficacious prophylactic treatment.

Under the head of care of the skin, Bouchardat advises a sponge bath in the morning, followed by long and vigorous rubbing with a dry towel and the flesh-brush; then massage with the hand well ointed with sweet oil. At the same time large and deep inspirations should be taken. Every week from one to three hygienic baths: 3 ounces carbonate potassa, ½ drachm essence lavender, 1 drachm tincture of benzoin to the water of a bath. These baths should be followed by friction and massage.

Sea or river baths, if indulged in, should be of short duration, and followed by rubbing and exercise.

There is another kind of abnormal acid gravel to which I must allude, namely, oxalic gravel. This kind of deposit is found only occasionally or accidentally in the urine, and this fact clearly separates it from the preceding. While we have seen that uric gravel is ordinarily the result of a disturbance in the nutritive processes, in oxalic gravel we can allege but one cause, the introduction by food of vegetable substances containing oxalic acid. In fact, this is the gravel of individuals badly fed—of the peasant, the poor man. Proust, Bird, Garrod, Furbinger, and more recently Ralfe, have contended that there is an oxalic diathesis, but I believe, with Lecorché, that this diathesis is far from being demonstrated, and still further enlightened on the subject, we are to consider oxalic gravel as a simple accident, and the experiments of Esbach are absolutely confirmatory of this view. The more probable view, then, is that oxalic acid is never found in the urine except when introduced by the food.*

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*Furbinger claims that oxalic acid is a constant product of the urine, and that its daily elimination does not exceed 24 milligrammes. Bicarbonate of soda does not augment the production of oxalic acid, nor do febrile processes increase its elimination.

According to Ralfe (*London Lancet*, Jan. 12, 1882) the sources of oxalic acid in the blood and in the urine are the following:

1. Certain ingesta—rhubarb, sorrel, tomatoes, onions, turnips, contain it, and in some persons cause digestive troubles and temporary oxaluria.

2. Incomplete oxidation of saccharine or oleaginous substances. Coming from these two sources, the oxaluria does not determine any disturbance in the general health.

3. Exaggeration of the interstitial nutritive processes under the influence of most febrile affections, pulmonary and cardiac affections with dyspnœa, disturbances of the hepatic functions, and an asthenic condition of the nervous system. This etiological variety is frequent.

4. Mucus in the genito-urinary passages; such is probably the origin of the large crystals of oxalate of lime found so frequently in the urine in spermatorrhœa. It is possible that the deposits of oxalic acid which form in the urine of ataxic patients, especially at the epoch of the urinary crises, are due to a modification of the state of the mucosa, associated with troubles of the innervation.

5. Acidity of the urine.

Esbach has proved that a great number of aliments contain oxalic acid, and the list given below shows the quantity of this acid in divers articles of food:

1. SPICES AND CONDIMENTS.

Black tea	3.750
Cocoa	3.520
Chocolate	0.900
Coffee (artificial admixture of retail dealers)	0.127
Chiccory-coffee	0.795
Pepper	3.250

The difference in the pathogeny of these kinds of gravel entails a great difference in the therapeutic indications. Here the first indication to fulfil is dietetic, namely, the suppression of aliments containing oxalic acid, and as it is in gooseberries, tomatoes, garden rhubarb, and especially sorrel, that we meet with this acid, you should proscribe these articles of food. Bouchardat recommends also to interdict the gaseous beverages, effervescent wines, sparkling beers, the natural and artificial gaseous waters, and counsels the use of a varied and restorative diet.

Moreover, be guided by the curious analyses of Esbach, who has examined the various articles of food and condiments to ascertain how much oxalic acid they contain. You will not be surprised to learn that tea, cocoa, chocolate, pepper, contain per kilogramme

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2. FARINACEOUS SUBSTANCES.

White bread	0.312
Potatoes	0.046
Bread of good quality	0.047
Barley flour	0.039
Wheat bran	0.848

3. VEGETABLES.

Sorrel	3.630
Spinach	3.270
Garden rhubarb	2.466
White cabbage	0.003
Beets	0.300
Green beans	0.212
Tomatoes	0.053
Celery	01025

4. FRUITS.

Dried figs	0.270
Currants	0.137
Prunes	0.120
Raspberries	0.062
Oranges	0.030
Citrons	0.030
Cherries	0.025
Strawberries	0.012

(Esbach on Oxalubria, *Bull de Therap*, 1883, t. CIV, p. 385.)

more oxalic acid than sorrel, namely, from 3 to 4 grammes. But remember this important fact, that milk never determines the presence of oxalic acid in the urine, hence a milk diet is excellent for patients afflicted with oxaluria. Such are the principal indications pertaining to the hygienic treatment of oxalic gravel.

You ought also to endeavor to dissolve these calculi of oxalic acid, or to expel them, and here you will understand the importance of an exact knowledge of the kind of lithiasis you have to treat. In fact, as Roberts shows, oxalic acid and the oxalates are not attacked by alkalies, which can only act when there exist, as sometimes happens, mixed calculi, i. e., containing oxalate of lime and urates.

There remain the diuretics, and we have here medicines which are of considerable use in oxaluria, such as diuretic infusions and mineral waters. Golding Bird speaks favorably of vegetable infusions, such as compound infusion of gentian, balm tea acidulated with a few drops of aqua regia, etc. The mineral acids (nitric, nitrohydrochloric acid, sulphuric acid, acid-phosphate of soda) have been advised by eminent authorities in oxalic gravel; perhaps this mode of treatment is more theoretical than practical. I pass now to the treatment of alkaline lithiasis.

There are two kinds of alkaline lithiasis, the calcareous and the ammoniacal. The calcareous lithiasis is chiefly characterized by the presence of the phosphates of lime in the urine, and writers have even spoken of a *phosphatic diabetes*, i. e., an exaggerated production of these phosphates in the urine. You must remember, however, that these phosphatic salts, when in excess in the urine, are not deposited under the form of calculi, but are held in solution because of the temperature of the urine. When, after being voided, the urine cools, they are precipitated in the form of a whitish, latescent deposit. If these phosphates ever constitute calculi, this is a very rare occurrence. The case is different with the ammoniacal salts, which not seldom cause urinary concretions. The ammoniaco-magnesian phosphates oftener constitute vesical than renal calculi. This lithiasis is due to fermentation of the urea, and its transformation into ammonium carbonate. Therapeutically, then, the first indication will be to oppose this fermentation, in whatever way it may have originated.

Ammoniacal fermentation of urine is due to one of three causes: retention of the urine, inflammation of the kidneys, ureters and bladder, or to trophic disorders; but, as Pasteur has shown, all these causes come together under one head—the production of a special *torula*, which, acting as a true ferment, determines the transformation of urea into ammonium carbonate.

We are still ignorant as to the real causes of the production of this ferment, but we know that when the urine contains pus, mucus, or blood, or remains long in the bladder, this fermentation takes place. Moreover, repeated catheterizations, whether by getting up an inflammation, or by conveying germs, produce the same effect.

Nevertheless, this question of urinary fermentation in the bladder is very obscure, and for proof of this, I need only allude to the influence which trophic disturbances exercise upon this ammoniacal transformation. Take, for instance, two patients, both affected with paraplegia. Both have retention of urine, both have been sounded the same number of times, with the same instruments, and, nevertheless, one of them shall have ammoniacal transformation of the urine, while the other shall remain for months without any alteration of the urine taking place. The cause of this difference lies in the fact that in the first paralytic the disease is due to a profound lesion of the cord, while in the second the paraplegic symptoms are the expression of a functional disorder of the nervous system, of the nature of hysteria, for instance.

Whatever may be the cause, the therapeutic indication in these cases is very, simple, namely, to modify as far as possible the urine, so as to prevent the ammoniacal transformation. We accomplish this in two ways: by means of certain essences and resins which, when introduced into the system as medicines, pass out by the urine and favorably modify its properties, and by certain antiseptic substances. We fulfill the first indication by the employment of plants containing essences, like buchu, boldo and santal :

Buchu leaves are furnished by three species of barosma or diosma, growing at the Cape of Good Hope. These leaves contain (1) a volatile oil which, when exposed to the cold, furnishes a camphor very soluble in carbon-bisulphide; (2) a resin and a bitter extractive. The infusion is made by steeping one ounce of the leaves in a pint and a half of water down to a pint; dose, a wineglassful. The tincture is given in teaspoonful doses; the fluid extract in the dose of 10 to 30 drops.

There are three kinds of sandal wood in the market—the white, yellow and red. The white and red have little medicinal virtue. By distilling the yellow sandal wood (santalum citrinum) a volatile oil is obtained, the essence of sandal, which is administered in capsules in the dose of from 10 to 30 drops.*

The turpentines and resins have the same action, and I must especially call your attention to a remedy which has gained a world-wide reputation in the treatment of ammoniacal gravel, namely, Harlem oil, which is obtained by the distillation of juniper. Juniper (juniperus communis), as you know, is an evergreen shrub which is a native of Europe, and grows in many parts of the United States. The fruit and tops are officinal. This shrub owes its medicinal virtues chiefly to a volatile oil which it contains. The dose of this oil is 2 to 5 drops. The officinal preparations are the infusion and the oil. The peasantry in the south of France prepare from the wood of the trunk and branches a sort of tar which they call oil of cade; mixed with the essential oil of juniper, it constitutes Harlem oil.

In these cases of lithiasis I often prescribe a pill made by rubbing together Venice turpentine with the soft extract of cinchona. This pill weighs just 2 grains, and is composed of equal parts of the two ingredients. The dose is three pills after breakfast and dinner.

Within the past two years a new remedy has been introduced, which comes from Chili, and is called pichi (fabiania imbricata). This plant is said to have a special elective action in catarrhs of the urinary passages. In the United States a fluid extract is in use, which is a good preparation, and may be given in frequent doses of half a drachm.

There are certain substances of an antiseptic nature which may be used internally, such as the benzoate of soda, salicylic acid and resorcin. The latter has been made a special study by me in this hospital, and my pupil Hippocrates Callias has made these clinical experiments the subject of his inaugural thesis.†

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*For remarks on Boldo, see "Modern Treatment of Diseases of the Liver," of present series, p. 131.

†Resorcin ($C_6H_4\,OH_2$), a body similar to phenic acid, was discovered in 1880 by Hasiwetz and Barth. It was first obtained from certain resins, such as asafœtida, galbanum and ammoniacum. It has since

Lastly, in certain cases, you can act directly on the bladder by injecting liquids destined to prevent fermentation—solutions of chloral, carbolic acid, and especially boracic acid.

In making these injections you can employ a double or single catheter, and the ordinary pear-shaped rubber-ball injector. These injections should be tepid, and when there exists paresis of the bladder, it has been advised to give them warm—104° F. to 112° F.—with the intention by the heat of stimulating the contractions of the vesical mucous membrane. These little measures, which belong

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been made in the laboratory by synthesis. Resorcin is found in commerce under three forms:

1. Large garnet-colored crystals, of strong phenic odor; this is the impure product of commerce.
2. Prismatic needles of rose-color and almost odorless.
3. Chemically pure (obtained by Monnet's process) in very fine, sparkling white needles); this is medicinal resorcin.

Omitting the physical properties, and considering resorcin therapeutically, we find it to be antifermentative and antiseptic, caustic in concentrated solution, and hæmostatic; it coagulates albumen. It has also antithermic properties.

Taken internally in the dose of from 1 to 2 grammes, it is rapidly eliminated by the urine, in part unchanged, and in part under a form yet unknown. This urine becomes of a deep brown color on exposure to the air. Treated by perchloride of iron (when resorcin is present in sufficient quantity), you obtain with an abundant white precipitate, a deep violet coloration similar to that obtained with salicylic acid. Resorcin is toxic in large doses like phenic acid; in the dose of 30 centigrammes per kilogramme of the weight of the body, it produces convulsions, which may be compared to electric shocks succeeding each other at short intervals. In the dose of 1 gramme per kilogramme, it is rapidly fatal, the animal dying in 30 seconds with convulsions.

Resorcin has been given internally in fever with antithermic intent, and recently Peradon has brought together a certain number of cases occurring in the service of Dr. Desnos. These observations tend to prove that if resorcin has no curative action in rheumatism, it notably brings down the temperature in typhus and typhoid fevers. The dose as an antithermic is 30 to 45 grains, this quantity to be administered in divided doses during the twenty-four hours. (Callias, On the Employment of Resorcin in Therapeutics, These de Paris, 1881—Dujardin-Beaumetz and Callias, On Resorcin and its Employment in Therapeutics, 1881, Peradon, On the Employment of Resorcin in Therapeutics, These de Paris, 1882, etc., etc.)

rather to surgery than to medicine, are of considerable importance, for vesical catarrh and its consequences are extremely frequent in male patients when they have attained an advanced age.

But here the dominant indication will be to prevent the sojourn of the urine in the bladder. You ought then to insist on the patient urinating as often as possible, and if the bladder is too inactive, or the prostate too voluminous to enable the vesical muscle to empty the viscus completely, you should urge the necessity of the use night and morning of the soft rubber catheter, whereby all the urine shall be drawn off, and not allowed to remain long enough in the bladder to become decomposed and deposit strata of ammoniaco-magnesian phosphates.

If there are means which are useful in the treatment of ammoniacal lithiasis, there are also means that are dangerous. The prolonged use or abuse of alkalies, by augmenting the alkalinity of the urine, is sure to do harm. Hence you see the necessity of what I insisted upon at the beginning of this lecture, namely, the determination of the nature of the lithiasis which you have to treat, and while you have seen that alkalies are heroic and curative in uric lithiasis, they can do nothing but harm in the treatment of ammoniacal lithiasis.

Such are the principal therapeutic indications in lithiasis.

AMBLYOPIA PRODUCED BY MENSTRUAL SUPPRESSION.

By Charles W. Kollock, M.D., of the University of Pennsylvania, and member of the American Ophthalmological
Society, Charleston, S. C.

Of the varied eye troubles produced by functional and pathological disorders of the female genital organs, none is more universal or interesting than blindness caused by suppression of menstruation. The histories of but a few of such cases are on record, and in no one of those which were accessible has the blindness been as complete and duration as long as that about to be reported.

On the 23d of February, 1888, a bright mulatto girl was brought to me by her father for examination. Her history was as follows:

While at school, one year ago, her eyes began to cause a great deal of annoyance; there was intense pain in the eyes and head, and she found it impossible to study. An oculist was consulted, who advised glasses to correct an existing myopia (3D.), but beyond increasing her distant vision, there was no improvement. She was taken from school on account of inability to study. In April, 1887, she menstruated for the first time, she being then 12 years of age. As soon as menstruation was fairly established the pains in the eyes and head and inability to read disappeared, and during the summer her improvement was so marked that she was sent back to school in September. Menstruation ceased in October, the eye and head symptoms immediately returned, and in December she was removed from school in a deplorable condition, entirely blind in the right eye and but little vision in the left. The remaining vision gradually failed until I saw her on the 23d of February. She had then been blind in the right eye for two months, while the left had but sufficient sight remaining to see objects very indistinctly at two feet. Her condition was as follows: general appearance anæmic; sluggish in every way, but answering questions intelligently; expression of countenance dull; eyelids drooping slightly and somewhat thickened; pupils reacting sluggishly. Examination with the ophthalmoscope showed the lens and vitreous clear and fundus normal; optic papillæ pale, but no organic change, and a myopia of 3D. (or—13). I advised the father to take her home and place her under the care of the family physician, and wrote him, telling him the result of the examination, and suggested treatment for the amenorrhœa. Twenty-seven days later menstruation began, and thirteen days from that time, upon awaking in the morning, she found her vision returning. Her improvement was very rapid, and she soon regained full vision and has had no further trouble. The length of time that blindness lasted in this instance—*three months*—is most unusual, and that the sense of sight can be so long held in abeyance by some functional nerve trouble and entirely recovered, is remarkable. M. Dor reported a similar case at the Ophthalmological Congress held in Heidelberg in 1884, where blindness lasted twelve days in the right, and six weeks in the left eye, with hemianæsthesia of the left half of the body. Vision was perfect after menstruation became reëstablished.

Christensen reports a case of a married woman 33 years old, who had epileptic attacks before each menstrual period, and would be blind for several hours later. At one time she became blind after an hour's headache with non-appearance of menses. This condition lasted for a month. The fundus was at first normal, but another epileptic attack supervening, the optic disk became markedly hyperæmic. A month later she menstruated and vision began instantaneously to return gradually, but was never perfect. Four years elapsed before she had a similar attack and improvement, after which progressive atrophy came on.

Hirschberg reports two cases of amaurosis hysterica with optic atrophy in girls 16 and 18 years old who had not menstruated. Kohn reports the only case known to him of amblyopia from suppression. A woman 48 years of age during a menstrual period could not see with the left eye, and there was a sense of fulness and difficulty of moving the eye. Examination of the fundus was negative and color sense was lost. She was treated by bromides and leached, and with returning menses vision improved. Samelsohn reported amaurosis on sudden suppression in a strong girl of twenty-one years. She was working at the time of her period bare footed in a cold brook. There was fulness in orbits that evening, slight loss of sight the next day, which progressed to absolute blindness in five days. She suffered from pain in the balls and orbits, but the fundi were normal. She was treated by mustard foot-baths and plasters, leeches to the temples, diaphoresis, aloes and iron. Central vision very soon returned and gradually improved; menses returned in seven weeks after a severe breast pain. Twice a hearty cry lessened the orbital fulness and improved vision.

TREATMENT OF DYSENTERY BY NAPHTHALIN ENEMATA.—Dr. Gingertoff (*Russ. Medits.*) orders seven or eight grains in an ounce of water for a single enema, and finds that this in a very short time relieves the tenesmus and the burning sensation at the anus. The patient is able to obtain rest and sleep, and in some cases is cured without any repetition of the enema. In other cases two or three enemata have to be given at intervals of a few hours. Where needful, this treatment is combined with the internal administration of quinine.

SELECTED PAPERS.

ON THE ÆTIOLOGY AND TREATMENT OF ENURESIS NOCTURNA IN BOYS.

By **Oberländer.**

The treatment of nocturnal incontinence of urine in boys is by no means satisfactory, and the views held now-a-days are much the same as those received twenty or thirty years ago. Some regard it as the result of the combined action of a variety of causes, such as deep sleep, taking fluid in the evening, weakness of the sphincter of the bladder associated with strength of the detrusor muscles, etc. Trousseeu and Bretonneau look at it as a neurosis, and suppose a disproportion between the intervention of the sphincter and detrusor musclee. Others again hold that when enuresis occurs in boys over 18 months of age either phimosis or acute adhesion of the prepuce to the glans penis is always present. The results of experience, however, show that none of these views are satisfactory. Neither circumcision, nor drugs, nor the strictest regimen as regards the taking of fluids, will effect a cure in some instances. A neurosis may be imagined, it is true, to account for irregular nervous action in any part of the body. But here it seems singularly improbable. For on the one hand, localized neuroses in children of tender age are exceptionally rare; and on the other hand, the facts that most of these children are able to retain their water by day and void it suddenly and in full stream shortly after going to sleep, seem to indicate that physiologically the nervous apparatus is intact, and acts only in response to some stimulus. It is much more natural to suppose that in healthy children the mechanism is normally developed, and that its unconscious activity is due to reflex irritation. When this cannot be detected at the end of the penis, in the shape of phimosis, and in adhesion of the prepuce to the glans, Oberländer suggests it may exist in the urethra itself. In adults, stimuli acting in the region of the neck of the bladder and upper part of the urethra, bring on a condition very like the enuresis of children; so that we can readily understand that the presence of any irritation in this part of the tube in a child would very probably cause nocturnal incontinence.

It is an accepted matter of fact that the strength of the sphincter vesicæ and of the detrusor muscles varies greatly in different individuals, without any reference to general health or the development of the nervous system. We find small, ill-conditioned men with very powerful bladders, and the reverse; and this can only be explained by differences in the muscular development. Oberländer is convinced that men with strong bladder muscles are much less liable to vesical disease and troubles in the upper part of the urethra than those whose bladders are naturally weak; and has frequently found that patients suffering from catarrh of the bladder, or a posterior urethritis, have been afflicted with nocturnal incontinence in their childhood. In the same way, a child whose bladder is naturally weak, will be very liable to suffer from the effect of reflex stimulation.

Oberländer suggests that such congenital weakness of the bladder arises in the following way: Whilst a child is suckling, the bladder muscles react to the slightest stimulus, increase of the pressure of the abdominal viscera when crying or when the bowels are acting, external cold when the clothes are taken off, etc. In the course of the first year these muscles develop and begin to act in combination. The balance of power, however, is very delicately adjusted, so that a very slight cause is sufficient either to check their development or to cause irregularity in their action. Such a cause may frequently be of very narrow calibre, about 2 cm. long, and lined with mucous membrane. If several be examined, post-mortem, there will be found here and there one with the caput gallinaginis abnormally large, and standing out like a pillar in the floor of the tube. This, it is evident, may act under some circumstances as a powerful stimulus. Further, in this part of the urethra are the mouths of a number of glands belonging to the sexual apparatus, e. g., Cowper's glands, the vesiculæ prostaticæ, etc. Though these only assume their normal functions at puberty, it is a mistake to suppose that in childhood they are quite quiescent. Organic disease of these organs is very rare in children, but cases of inflammation of Cowper's glands have been observed and described. The frequent erections, however, to which some children are liable in earliest infancy, and the not unfrequent instances of masturbation, prove that the sexual apparatus is not altogether inactive. Several possible sources of reflex irritation exist in the urethra, and it is evident that while the bladder muscles are only weak, they may prove sufficient to cause its involuntary evacuation.

These slight anomalies of childhood may, in course of time, disappear, or cease to have any influence; but on the other hand, Oberländer thinks many cases of so-called "irritable bladder," and frequent pollutions at night, are attributable to such reflex stimulation.

The treatment he adopts is to dilate the upper part of the urethra by means of an instrument he has devised. The mode of procedure is described in full in his works entitled, "Zur Kentniss der nervösen Erkrankungen," and "Pathologie und Therapie des chronischen Trippers" (Wien, Braunmuller, 1888); and the dilator in the *Centralblatt für chirurgische und orthopädische Mechanik von Heinecke* December, 1887. Klengel, of Dresden, is the maker. There is not the slightest danger in the operation, and this treatment has effected a cure where all other means have been tried without success.—W. WANSBROUGH *in Medical Chronicle.*

A STUDY OF LONGEVITY IN NEW ENGLAND.

Mr. Clement Milton Hammond has made an interesting contribution to the subject of longevity in a recent issue of the *Popular Science Monthly.* Mr. Hammond, as an associate editor of the Boston *Globe,* had peculiarly good opportunities for making a collective investigation regarding the old people of New England. He sent out 5,000 blanks to all parts of the section in question. These blanks contained a variety of questions concerning age, sex, nationality, social condition, habits, temperament, occupation, etc. He had the unusual good fortune to get over 3,500 blanks filled out and returned. The answers were from every county in Massachusetts, and nearly every county in New England.

Mr. Hammond has analyzed these returns, and for the most part has shown care and judgment in so doing. He does not seem to be aware, however, of the similar work done, much more thoroughly, by the British Collective Investigation Committee, and his own labors would no doubt have been helped by a wider knowledge of previous work in this line.

We present some of the data which were obtained.

As to social condition, over 95 per cent. had been or were married.

The number of women slightly exceeded the men.

The marriages had generally been fruitful, the average number of children being five.

Five out of six of the old people had light complexions, with blue or brown eyes and abundant brown hair; being probably of the nervous-sanguine temperament. The men were "mostly tall." (Mr. Hammond is uncommonly vague in many of his statements.) They were thin, bony and muscular, while the women were plump. The men varied in weight from 100 to 160 pounds, and the women from 100 to 120 pounds. The men could not be so very tall, therefore, or the women very fat.

As to habits, the rule was almost universal that the old people had gone to bed early and got up early. This was also found to be the case by the British committee. Their meals had been eaten regularly, the dinner hour having been usually at noon.

As to occupation, out of 1,000 men over eighty years of age, 461 were farmers, 92 carpenters, 61 mariners, 49 laborers, 42 shoemakers, 41 manufacturers, 23 clergymen, 12 physicians, 12 lawyers, 23 masons, 16 blacksmiths, 16 bankers.

This list, however, signifies nothing, except that nearly half the answers to the blanks were from farmers.

Eight hundred out of 1,200 women were farmers' wives. The diet has been the ordinary New England fare, of pork, beef, fish, vegetables, "almost always poorly cooked," with pies, doughnuts and cakes.

Two-thirds of the number drank tea and coffee habitually, and nearly all drank tea.

"Very few" used alcohol, but a large proportion of the men used tobacco.

About one-third of the men, and nearly the same proportion of women, had never been ill since childhood.

About one-fourth of the children of the old people were still living.

Mr. Hammond notes the fact that most of his returns showed that the old people were employers rather than employees, and he draws the conclusion that a certain amount of responsibility tends to prolong life. He is disposed to lay some stress on the value of the nervous-sanguine temperament as a factor in longevity.—*The Medical Record.*

IN THE HEART OF THE ALLEGHANIES—THE CLIMATE AND SANITARY QUALITIES OF WESTERN NORTH CAROLINA.

By Henry O. Marcy, A.M., M.D., LL.D., of Boston, Mass.

Some notice of the climatological factorage of the United States, as influenced by the great Appalachian chain of mountains, in their southerly extent, should be taken in this Section of the Congress. Geologically of the oldest formation, in their immense range, they extend from Canada on the north far down into Alabama.

Broken in the north into every diversity of pattern, they carry on their broad slopes, in their central portion, the great coal measures of Pennsylvania, separating Virginia from her western division, under the name of the Blue Ridge, and it is not until the border of North Carolina is reached that they assume their grander proportions. Here they separate into radiating lines, traversing the entire State, stretching down into South Carolina and Georgia, and are intimately connected by irregular cross ranges, so that the whole section, as viewed from some of the greater elevations, presents, as far as the eye can reach, in every direction, an extremely rough sea of billowy mountains, and within a limit of fifty miles there are twenty or more peaks that are over six thousand feet in altitude. This territory comprises about ten thousand square miles. The valleys, for the most part, have an elevation above the sea level of two thousand feet and upward.

The Blue Ridge on the east is the water-shed, although the Smoky Range on the west is of the greater altitude. Through this the streams have cut their way, often by extremely wild and picturesque gorges, sometimes traversed with great difficulty and even danger.

These mountain ranges present many features of scientific interest, chief of which is found in the composition of the granite. The decomposition of the rocks is most extraordinary, railroad cuts often extending fifty feet through the ledges, requiring only the use of the pick and shovel. The explanation is found in the fact that the feldspar is by far the largest factor of the granite; often it with the mica and quartz lie in separate layers, and to this peculiarity is due the exceptional purity and extent of the mica veins here found of greater size than elsewhere in the world. To the decomposed feldspar, setting free potash salts, is also due the marvelous tree growth which covers this entire territory, nine-tenths of which is yet the primeval forest. These forests consist chiefly of deciduous in great variety, oak and chestnut predominating. Under their broad arches, spreading out in leafy shade, eighty to one hundred feet above the traveler, one may ride on horseback almost anywhere, except along the streams, which are thickly hedged by an almost impenetrable jungle of kalmia and rhododendron, whose waxy leaves, in June and July, are almost hidden by the great bunches of pink and white bloom.

Pearly streams of the purest water make laughing music through every valley, and from the hillsides gush forth in endless number cool springs, often impregnated with iron, sulphur and other minerals. In a few places lithia springs are reported and claimed to possess much medicinal value.

The smaller streams abound in trout; the larger game is still found in the forest depths, holding attractions for the sportsman, while the seeming endless variety of plant growth furnishes interest to the botanist, and the lover of nature never tires of the kaleidoscopic pattern of landscape picture, on every hand, domed by the clear blue vault of heaven, which is itself often the panorama of cloud and storm rarely seen outside these mountains.

The great variety of forest and plant growth is found in the fact that these elevated ranges extend into a southern latitude. In climbing the sides of some great mountain, the different tree growth of two thousand miles in latitude may be met, until near the summit one wanders under the impenetrable shade of the balsams and firs peculiar to the great stretches north of Canada and to Northern Europe.

From the above description ready reference will be made of a scant population, which is found, indeed, in a class of hardy mountaineers, simple and uncultivated in taste and habit, whose chief wealth lies in broad acreage of small monetary value, interspersed with little patches of corn and grain along the larger streams, and also in herds of cattle, sometimes of considerable size, which roam through the forest at will, and are often found grazing upon the highest tops of the mountains.

On account of the inaccessibility of this section until recently, it has been less known to the outside world than perhaps any other of equal size in the United States east os the Rocky Mountains. Before the late war, a few of the more wealthy planters upon the coast of the Carolinas and Georgia took refuge upon the easterly and southern slopes from the summer heat, and during the four years of conflict many families found safety here from the warlike incursions which sooner or later spread over nearly every other portion of the Southern Confederacy.

When first known to the whites, this region was the central home of the Cherokee Indians, and in this tribe was found a civilization superior to any other of the races east of the Mississippi. When visited by William Bartram in 1772 (see his most interesting book published in London in 1778), he found them dwelling in houses made of logs, much as now seen occupied by the natives, and separated in families, living a peaceful life, cultivating their corn and beans in well kept fields. He repeatedly expressed his wonderment at the physical strength and beauty of the natives.

In these valleys may yet be seen in good preservation the great mounds of a prehistoric race, and following many a vein of mica has been traced the cuts and tunnels from whence were obtained the splendid specimens found in the tombs of these extinct races extending through the valleys of the Ohio and Mississippi.

Among the first of the railroad projects of the South, now more than forty years ago, was the plan to cross these mountain ranges, uniting the sea with the then early developing West. This was earnestly advocated, among others, by John C. Calhoun and Robert I. Hayne, then the two leading political economists of the South, the latter of whom died in Asheville, N. C., in the furtherance of this object. Owing to the disasters following the recent conflict and the engineering difficulties to be overcome, it is only very recently that this territory has been rendered by any means fairly accessible to travel. The invalid seeking health in this region has also been met with the extraordinary disadvantage of not finding, even in moderate degree, the home comforts so essential to his welfare. However, the advantages offered to invalids, in considerable variety of disease, were so apparent that many have braved the discomforts attending such evils, and results have been attained of a character sufficiently marked to warrant the further study of the climatic conditions of this wide extent of country.

Asheville, the central metropolis of this region, has grown, within a short period, from a small village to a city of about nine thousand inhabitants. At first it was simply a summer resort for the residents of the low country south, and, until very recently, almost without winter visitors. Now a considerable percentage of the inhabitants consists of invalids from the North, many of whom have found such marked improvement that they have made it a place of permanent abode. Some of the residences are homes of wealth and comfort, and a number of excellent hotels offer good accommodation. The largest are the Swannanoa and the Battery Park. The latter, recently erected by Col. Coxe, of Philadelphia, is a model of excellence rarely surpassed anywhere. This was nearly as full last winter as during the more fashionable summer season. Dr. Battle, a resident of the hotel, who has had the opportunity of observing several hundred cases, assures me that he has rarely seen a patient whom he thought had made a mistake in selecting Asheville as a health resort. I saw several physicians who not only were enthusiastic in the belief that this section was one of great healthfulness, especially to be commended in pulmonary diseases, but said they themselves were compelled by disease to leave other localities, while here they were able to endure the fatigues of the active practice of their profession. One who four years ago had had frequent hæmoptysis and a supposed cavity, was now nearly free from cough, had been actively at work, and certainly gave every appearance of recovery. From Dr. Watson we received a confirmatory report in his exceptionally large and varied experience. I have sent about fifty patients to Asheville and vicinity within a few years, and, for the most part, with very satisfactory results.

The town has not been entirely free from diarrhœal diseases and typhoid, but great improvement has been made within two years in the introduction of pure water from a distance, and a system of good sewerage has been also inaugurated. The location is excellent—upon a plateau, with a beautiful outlook over an amphitheatre twenty miles in diameter, surrounded by mountains, yet clothed, for the most part, by forest.

Asheville is twenty-three hundred feet above the sea, and from its southern location possesses advantages in climate which, for mildness, is not unlike Southern France. From observations now made for a number of years, the mean average temperature of Asheville is: Spring, 52.3°; summer, 71.3°; autumn, 55.3°; winter, 37.2°; year, 55.3° F. During a period of eight years the thermometer but twice rose above 88°, and only three times fell below zero.

I here append a carefully kept record, tabulated by Mr. D. S. Watson, of Asheville, for the first four months of 1886. The cold wave of January will be remembered as having passed over the entire South, and was of a severity beyond that in the experience of "the oldest inhabitant."

I copy the following tables from a reprint of Dr. H. T. Gatchell:

TABLE A.

Table of deaths from consumption in 10,000 of white population, excepting in Western North Carolina, where the estimate is for whites and blacks:

Four counties in Western North Carolina	6.5
Three counties in South Carolina, with Aiken as Central point	10.2
Minnesota	10.7
Four adjoining counties in Georgia, with Thomasville as central point	11.3
Peninsula of Florida	13.0
Mainland of Florida	18.0
Plains of Colorado (excluding Denver)	21.6
Maine	28.0
Los Angeles County, California	29.0
Massachusetts	29.0
New Orleans	30.0
District of Columbia	30.0
Charleston, South Carolina	31.4

TABLE B.

Table of deaths from pneumonia in 10,000 of white population, excepting in Western North Carolina, where the estimate is for whites and blacks:

Western North Carolina	4.5
Los Angeles County, California	5.3
Four counties in Georgia, with Thomasville as central point	5.5
Florida	5.7
Minnesota	6.0
Michigan	8.0
Charleston, South Carolina	9.0
Maine	9.0
New Orleans	9.3
District of Columbia	10.0
Massachusetts	14.0
Plains of Colorado (excluding Denver)	17.0

The late Dr. H. T. Gatchell, of Asheville, was a careful student of the section of country adjacent to Asheville for many years, and his observations, first published nearly twenty years since, are of much value. His son, Dr. E. A. Gatchell, writes me his experiences are confirmatory of those of his father. The elder wrote: "In a series of nine years the mercury did not rise above 90° F. any day in summer, the nights are always cool, permitting refreshing sleep. In winter it is seldom that a zero temperature is reached, while the air is comfortable, dry, clear and invigorating.

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"The following table gives the ratio of consumption in several sections of the country. The figures indicate the number of deaths from this disease in every thousand:

New England (nearly)	250
Minnesota and California	150
Kentucky and Tennessee	100
Western North Carolina	30

To any who seek eutrance to the mountain region from the east, Aeheville will be the central point of interest, and, if actuated by the restlessness of most of our countrymen, the first stopping place. There can be no doubt but many localities upon the easterly and southerly slopes of the Blue Ridge present great attractions for invalids. A number of my medical correspondents write that some of these localities are especially desirable because of the dryness of the atmosphere and freedom from fog, which, at certain seasons of the year, prevail to a considerable extent through the mountains.

Unfortunately, no records of temperature, sunshine, rainfall, etc., from other localities have come under notice. The same general features of the landscape and climate here prevail. Along some of the southerly slopes the "no-frost line" is clearly perceptible, and sanitaria, well selected at such localities, would offer certain marked advantages. It is greatly to be regretted that careful observations have not been made at some of these places as to the equability of heat, amount of sunshine, rainfall, etc., as well as to the absence of severe cold, a fact so abundantly substantiated that it cannot be doubted, although a little distance away frost and ice are of common occurrence.

On the Western North Carolina Railroad, at Morganton, is located the State Asylum for the Insane, selected because of the healthfulness and beauty of surroundings.

The Piedmont Springs, fifteen miles north of Morganton, have been a favorite resort for a generation, and a long, rambling hotel, venerable in service, offers attractions of quiet and rest. The springs are sulphur, not unlike the White Sulphur of Virginia, and a short distance away is a fine chalybeate spring, entirely free of sulphur. The surroundings are wildly mountainous, picturesque, of a rugged Swiss type.

A few miles south of Marion, at Glen Alpine, is a large hotel, long a favorite resort of the residents of the southeast. Here are said to be good springs of iron and sulphur. Lithia springs are reported at several places on the southeasterly slopes of the Blue Ridge, but little, however, is known of the medicinal value of the waters.

The railroad crossing the Blue Ridge is an engineering feat worthy of modern science, and compares favorably with the difficulties overcome in the famous Sœmmering Pass of Europe. To the north, in the range known as the Black, towers Mount Mitchell, the highest peak of the entire region, 6,711 feet above the sea level. In a broken, undulating line runs the chain of the Blue Ridge to the Grandfather, fertile farms dotting its slopes here and there; a region intersected by valley and mountain, picturesque, wild gorges, rippling streams, tumbling cascades, forests, deep jungles of rhododendron, with a mean annual temperature of 45° F., quite similar to that of Vermont. From this point, the Grandfather, diverges the Smoky Range, called by the Indians Unaka or White, which forms the boundary line of Tennessee. Its grandest representative is found at its very beginning, in the Roan, 6,390 feet in height, and the beautiful peak called the "Yellow," a little less high than either, is the massive gate forever locked between these magnificent representative pillars of the splendid ranges of the Blue Ridge and Unaka mountains. Near the top of the Roan a large and comfortable hotel has been erected by General John P. Wilder as a sanitarium, open during four months of the year. It is the highest inhabitable spot east of the Rocky mountains. The difficulties encountered in the ascent make the journey a severe one for the invalid, although the railroad from Johnson City to Cranberry passes at the base of the mountain. The station called Roan is the point of leaving the rail. There is in contemplation the speedy completion of an elevated railway to the top. The Signal Service station on the mountain has furnished interesting and important data for climatic study. The equability of the temperature has far exceeded expectation, and the electric phenomena are very interesting. It has long been claimed that the Roan offered an asylum to the victim of hay fever unequalled, but the irony of Fate has in it another illustration., Now that the recluse here can be surrounded by the comforts of modern life, the old enemy continues in attendance, for hay fever has been reported in the entire locality the last two years, including also the region about the Grandfather.

A new avenue has been opened through the mountains from the south to Asheville, via Hendersonville from Spartansburg. Ten miles south of Asheville, amid pleasant surroundings, is the Arden Park Hotel, situated halfway to Hendersonville; also a town with good hotels, and the entire section one of beauty and interest. A little south from here is Cæsar's Head, an abrupt "fault" in the mountain on the South Carolina border. Much is claimed for this locality on account of its dryness, but I know of no reports of actual observations. The landscape views are extremely varied and interesting. The elevation is about 4,000 feet. The hotel is well kept and a popular resort in summer. The air is pure and bracing, and many attractions are found in the immediate vicinity to interest the invalid.

West is Cashier's Valley, a high table land about 3,400 feet above the sea. It is of repute as a resort for consumption. Still further west is the Highlands, a hamlet widely advertised as a health resort.

It is reached with great difficulty, indeed, to the confirmed invalid, inaccessible, long distance from the rail on either side, over roads of the worst sort. Here the average rainfalll has been found to be 70 inches annually, and, judging from the configuration of the abrupt mountain ranges bordering the lowlands lying south, it is presumable the rainfall of the entire region is excessive.

Down the French Broad river one easily reaches, by rail, the Hot Springs, which are becoming justly celebrated. The hotel accommodations are modern and excellent, while the baths are numerous and ample. The effect of the water appears not unlike the famous hot springs of Arkansas.

Westward from Asheville about thirty miles is the enterprising little town of Waynesville. In the Richland valley, one mile away, is situated the Hayward White Sulphur Springs. The proprietor, Major W. W. Stringfield, is justly popular, and his new hotel has been well filled with guests. The elevation is over 2,700 feet. The valley is very lovely, and the view of the broad meadows and lofty mountain ranges, as seen from the hotel, is beautiful beyond description. The waters of the creek rush along with great rapidity over the whitest pebbles, and their gentle murmuring is sweet music to the troubled heart and weary brain. Much curative effect is claimed for the sulphur water, which wells up pure and cool into a marble basin at the edge of the valley. Westward from Waynesville the railroad climbs the Balsam range to a height, at the divide, of nearly 3,500 feet. The dry, pure, bracing air has attracted hither invalids, who reported to me great benefit from a few weeks' residence, although the hotel is limited and designed only as a station for dining passengers. Beyond lie the beautiful broad valleys of the Tuckaseegee and Little Tennessee rivers, rapid streams of considerable size, only recently reached by rail; still further westward tower the splendid ranges of the Cowee, Nantehaleh and Valley River mountains, irregularly dividing the wide space of the base of the triangle made by the Blue Ridge and Smoky ranges. These are almost without exception clothed to the very top with the primeval forest, which yet covers nine-tenths of the entire territory. The country beyond the iron ways is of yet greater interest to the invalid able to "rough it" somewhat. The roads are, of course, poor, the hotels intended as hostelries only, but the quaint, old-time manners and customs of a rude but always hospitable, honest people, are a never-failing source of interest, and often of profit, to the student of men as well as nature.

The valley of the Nantehaleh is of interest as a broad plateau between the ranges, watered by the loveliest of rivers. Its banks are thickly hedged with kalmia and rhododendrons which in June present a mass of bloom never seen outside these mountains. The delicate branches of the graceful birches gently sway in the breeze, the music of the laughing waters fills the air; all else is the unbroken silence of the primitive forest. Mr. L. R. Finch, who resides on a cattle ranch in the Nantehaleh valley, has sent me a daily record of the weather during the past summer. The rainfall has been large and the variations in temperature considerable. On the 13th of June there was a frost and a temperature record of 30° F. I found the two weeks which I spent here during August of the present year very agreeable, although a fire morning and evening was a comfort. Frost was reported about the 20th of the month.

The Valley River valley surpasses all the others in beauty and picturesqueness; broad and fertile, a landscape rarely equaled, set in a mountain frame of living green, of which the eye never tires. The small hotel is ever full, and when proper accommodations can be reached by rail it will become a popular resort.

Surrounded by a medium from which there is even momentarily no escape, and which we must ever breathe, atmospheric impurities must be of the first consideration in the climatic elements. These are both chemical and atomic; while the relative amount of oxygen varies but little in a given weight of air taken from sea or mountain, its changes, even in very slight amount, are important. When deficient it is usually replaced by carbonic acid. The last is undoubtedly deleterious: nausea and headache are common in close rooms containing only one per centum of carbonic acid. These changes are also important as indices of an atmospheric contamination in a particular way by the presence of foreign material, chiefly of a fermentative type. Since these are usually of the lowest origin of spore plant life, the general name of germ contamination has been given to it.

The value of recent investigations upon this subject, as a cause of disease, is one of the triumphs of modern science, and invests the study of climate with new interest.

Since these minute growths develop under conditions of the atmosphere usually marked by the lessening of the oxygen and increase of carbonic acid, such changes assume an importance greater than earlier supposed.

The organic material exhaled with the breath is molecular and is disseminated by atmospheric currents. The odor from the decomposition of these organic elements is generally perceptible when the carbonic acid reaches seven parts in ten thousand, and is strong when it amounts to ten parts. One of the chief causes of lung diseases in cities arises from the atmospheric contamination by myriads of microscopic cell growths.

One danger, by no means hypothetical, from the consumptive, lies in the material expectorated. This very commonly dries where it is carelessly lodged, is pulverized and distributed as dust. In the inspiration of the atmosphere thus infected, the bacilli are lodged upon the mucous membrane of the air-passages, and, if these are inflamed or broken, may find a suitable soil for generation. In this sense certainly consumption is a contagious, or rather an infectious disease. Organic material in the air is ever to be looked upon as injurious. We can have no *chemical* test for discriminating between hurtful and harmless organic matter, since the poisonous infection is *vital.*

The mechanical admixture of water with the atmosphere in the form of vapor is a constantly varying factor, dependent upon a number of conditions, and although rarely entirely absent is an element of itself comparatively unimportant; however, in combination with heat, albuminoids and the omnipresent microscopic cell plants, it renders possible changes of the highest importance.

Atmospheric moisture has a marked influence upon the skin and its glandular functions, as well as upon the respiratory tract. Its presence also lessens, in a considerable degree, the permeability of the atmosphere by the sun's rays, diminishing thereby the oxidizing power of sunlight.

Ozone, although we know far too little of it as yet, as an agent, from its admitted powers, is an important atmospheric factor in its bearing upon climate and health. It is an allotropic form of oxygen which has attained new properties of an intensely active character, supposed to have been produced chiefly by electricity.

Ozone owes its great value as a disinfecting agent to its exceedingly powerful oxidizing qualities. The compounds of ammonia, phosphorus and sulphur are acted upon with great rapidity, and the odors resulting from decomposition are removed instantly. It is probably destructive to all the minute vegetable organisms. Under the direction of a committee from the American Medical Association a series of continuous studies in various sections of the country have been conducted for a number of years to determine if any relation exists between the development of acute epidemic diseases and changes of atmospheric character.

Ozone tests are being continually and carefully made. It exists in larger quantities in the atmosphere of mountains and forest country than elsewhere, and is increased most of all after severe thunder storms. To this, more than to any other agent, is to be attributed the so-called "clearing effect upon the air" after a thunder shower, giving a delightful, exhilarating feeling in respiration never experienced after a long rain.

Temperature is an important climatic consideration. The remarkable results obtained from a winter residence at elevated localities in the Alps has demonstrated the possibility of great gain, although the cold is intense. Under such conditions the atmosphere is nearly free from moisture and impurities, and the cold in the sunshine is seeming rather than real, since the diathermancy of the air is so great at considerable elevations that the sun's rays make it comfortable to remain out of doors when the ordinary thermometer registers a temperature of 20° or 30° F. The experience in our own country, of invalids at elevated regions of the North in winter, has been limited, and generally not favorable.

Patients have braved the winter in the Adirondacks, some with good results; but out-of-door exercise is limited, and the elevation of 1,000 feet too little to make the rarefaction of the atmosphere important. This is also true in the White Hills of New Hampshire. A *warmer climate*, with *elevation*, is important, and one of the great climatic advantages of the elevated regions of Western North Carolina consists in the latitude, which is south of 33° 53′ and 36° 33′. The winter temperature here is not unlike Southern France, while the elevation is from 2,000 to 3,000 feet. The invalid can comfortably be out of doors in winter here most of the pleasant days. One of the very best commendations of any climate is found in the largest number of hours and days suitable for exercise out of of doors. This, of course, applies to rain and storm as well as cold.

The barometric changes occurring in the great aerial ocean in which we live are of the greatest interest. From their study, in large degree, has arisen the new science of "Probabilities" as to weather, which already governs so great a part of the civilized world in its movements. Air currents are created, with changes of temperature, moisture, etc., many hundreds of miles in length.

In elevated localities, broken by high mountains there is a more or less fixed cloud region, where the chilling of the moisture-laden atmosphere causes condensation; especially is this true during the summer months. During the day the surface of the lower valleys is much heated, and the lower atmospheric stratum becomes rarefied and rises along the slopes, producing the breezes of the early part of the day. After sunset the higher peaks and sides radiate the heat more rapidly than the base, and the cold, condensed air descends, causing often an evening wind. These air currents vary greatly with the configuration of the locality, and should be studied in relation to the selection of sanitaria.

The formation of clouds about the mountain-tops is different. The warm, damp winds blow across the ranges, the air is suddenly cooled, and most of the moisture is precipitated in the form of mist, rain or snow. The air currents that cross the summits sink in various directions, condense and become warmer in descending, and, modification of the temperature of the air currents great variety to the cloud formation and rainfall. Often the wind blowing steadily in one direction will give abundant rain on the first range of mountains, while beyond it is clear and dry. These influences greatly modify the climate of the valleys, which is widely variable, according as they are sheltered from the winds and open to the sunlight. The extreme temperature between day and night is also more marked in the valley. Upon the side toward the sun, under the direct influence of its rays, the heat is increased by radiation during the day and diminished during the night. On the contrary, the differences in temperature between the heated and cold seasons is less marked in she valleys. Locations for residences in valleys should be selected that will furnish the greatest number of hours of sunshine.

When the atmospheric humidity is considerable, the morning and evening extremes of temperature in the valleys produce condensation of the moisture in the form of mist or fog, while the upper slopes may be entirely exempt from these.

An important climatic element of any country exists in the character of its surface. Its ability to absorb and retain moisture governs in large share its temperature, and the temperature of the soil in a marked degree governs the temperature of the air. They are usually alike. A loose, porous soil covered by a heavy tree growth furnishes the best surface for equalization of evaporation and uniformity of temperature. The earth's surface is charged with negative and the overlying atmosphere with positive electricity. The latter is much more marked in elevated regions broken in sharp mountain ranges. This produces in regions of considerable elevation, during the heated season, thunder storms of great intensity.

A mountain or elevated climate is advantageous to a variety of diseases influenced by a change of circulation. The lessening of the atmospheric pressure causes the diminution of the blood flow in the brain and central organs and increases it in the cutaneous surfaces. Imperfect nutrition, as exhibited in anæmia, indigestion, loss of appetite, etc., is greatly benefited by the pure, bracing air and exercise.

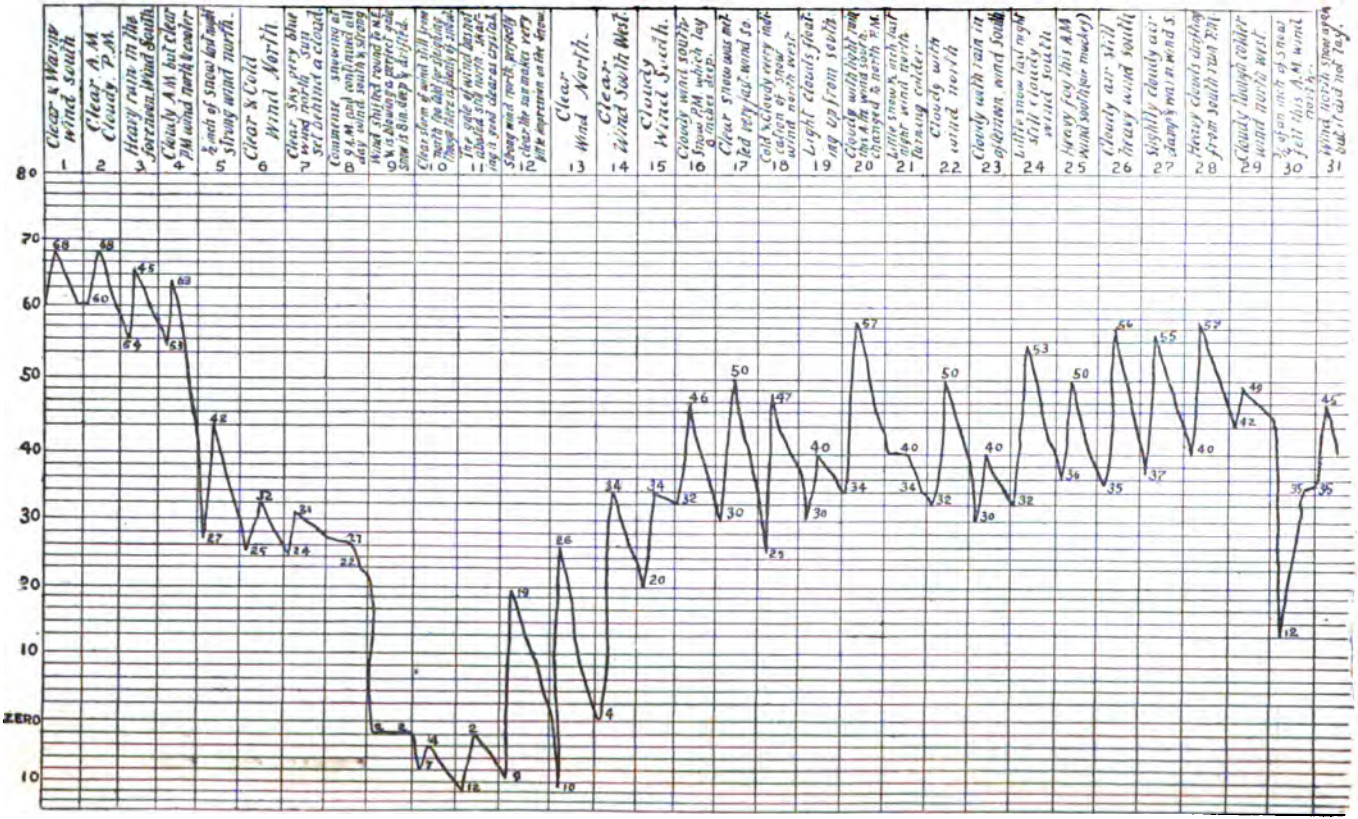
Neuralgia, nervous prostration, loss of sleep, headache, hypochondria, etc., lessen under the stimulus of a better nerve nutrition. The improved circulation and nutrition of the respiratory organs give relief in most cases of asthma dependent upon changes of the bronchial mucous membrane as well as upon innervation. Bronchial inflammations are usually benefited, and the increased respiratory function lessens the conditions favoring consumption, and often the disease itself, in its incipiency, is arrested.

The invalid suffering from extreme weakness induced by any cause, had better not attempt a residence in an elevated region unless by the advice of a competent physician, for, while an elevated climate is stimulating and has a powerful therapeutic action on most functions, it requires a certain integrity and resisting power, which the patient may not possess.

Organic diseases of the heart and great vessels are, almost without exception, made worse by the over-work demanded of the circulatory apparatus.

Perhaps the most important of all conditions to be considered is that of the mental state of the invalid when directed to any locality

RECORD OF WEATHER AT ASHEVILLE, N. C., FOR JANUARY, 1886. (D. S. WATSON.)



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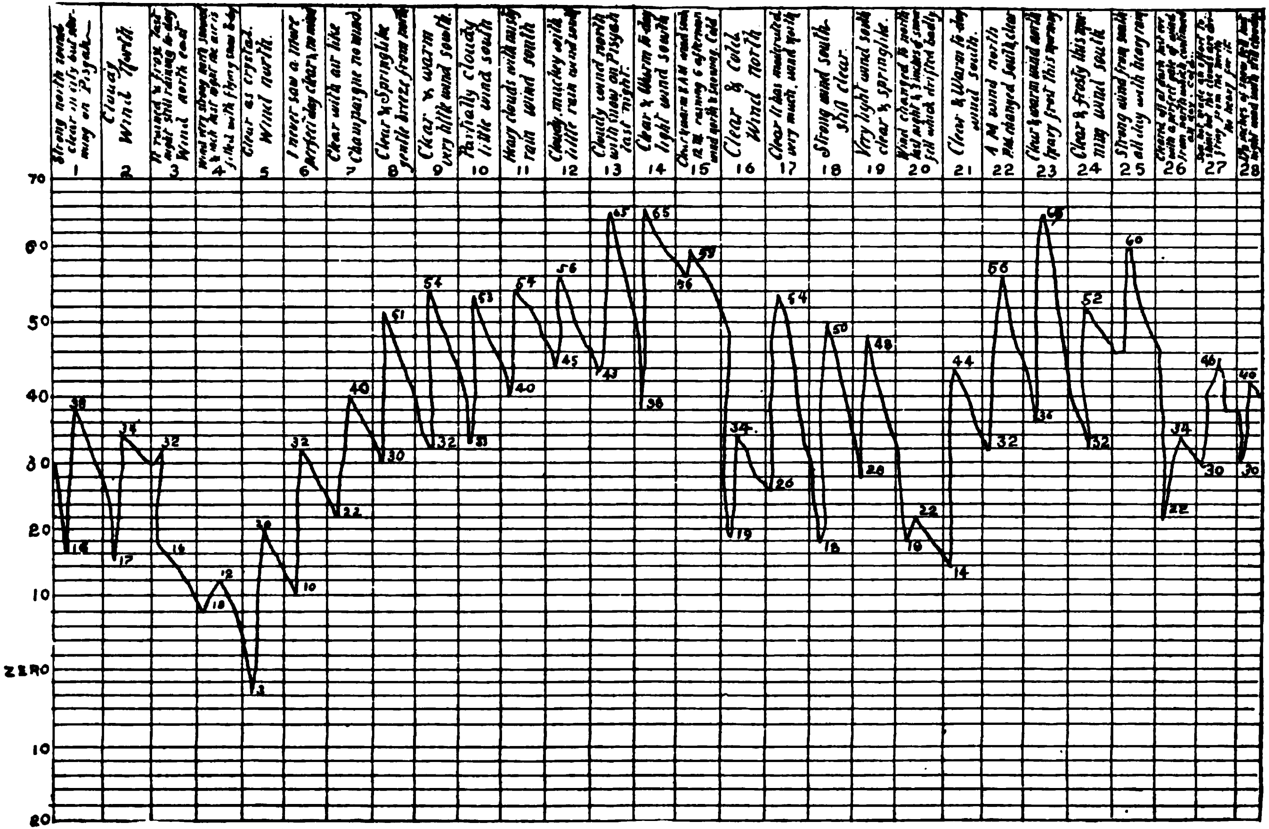
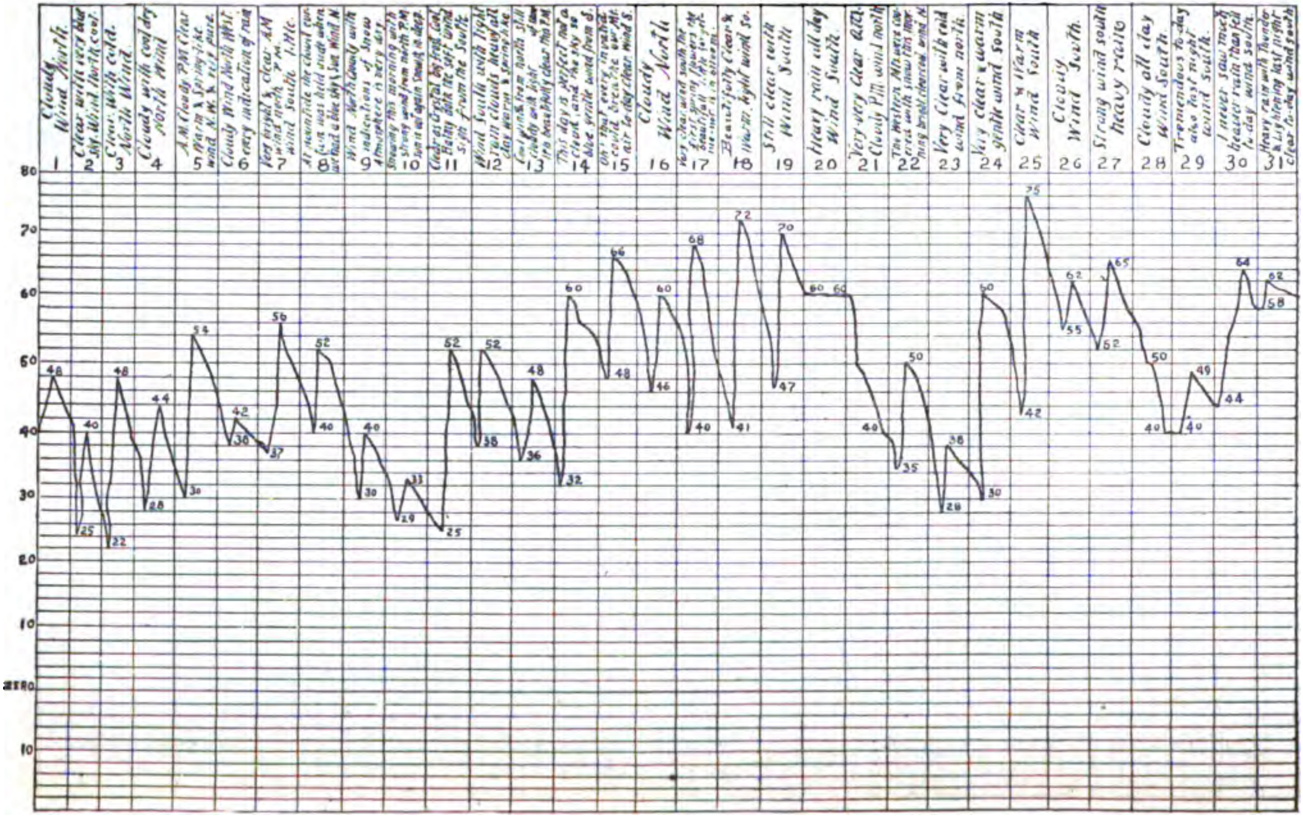


RECORD OF WEATHER AT ASHEVILLE, N. C., FOR MARCH, 1886. (D. S. WATSON.)



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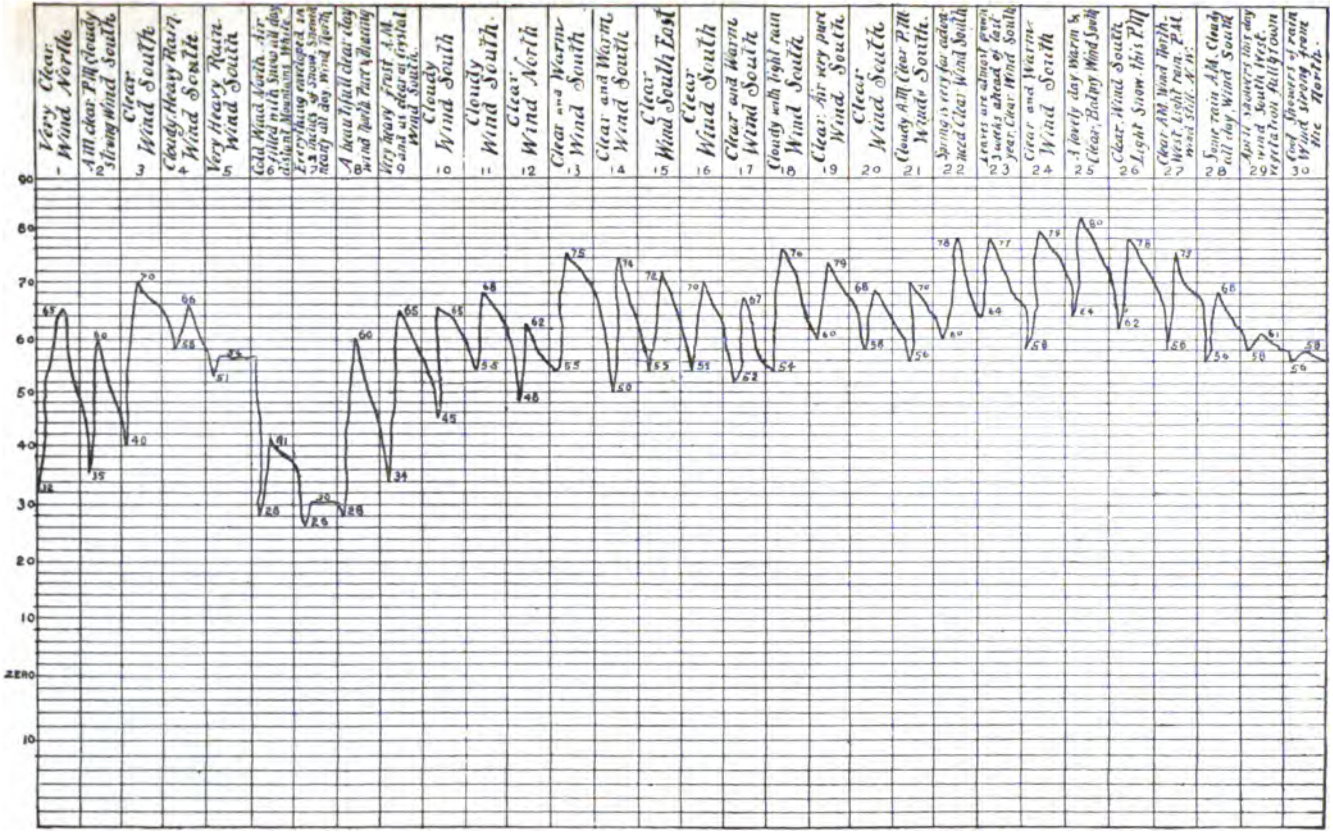

for the benefit of his health. They should not only be guarded against extremes of exposure, exercise, care as to diet, etc., but above all be given, as far as possible, a bright, hopeful, happy state of mind. All these prerequisites to improvement are so essential that the invalid does well to place himself under the care of a resident physician. Occupation to direct the attention from self should, as far as possible, be obtained. The sportsman finds recreative pleasure in the rod and gun, the botanist in the wide diversification of plant life, the geologist and mineralogist in the ever-interesting outcropping minerals about him. Indeed, Western North Carolina abounds in mineral wealth. Here are found the richest corundum mines of the world, rich ores of various kinds—gold, iron and copper—mica blocks, from six inches square to two feet, and marbles of most exquisite beauty, from pure white, pale flesh color to coal black, variegated by seams and stripes of every color. To one actuated by the need or pleasure, the rearing of flocks and herds, or the cultivation of the fertile fields, gives occupation and a healthful happiness.

"The bliss of a spirit is action," is the unwritten law of life, and he who seeks the renewal of its pulses must come under its universal requirement. To the invalid resting under condemnation from the violation of nature's laws, a wise selection of residence in the mountain regions of the great Appalachian chain holds out a hope often denied to the dweller in the cities of the plain. Everywhere mountains and streams, cliffs and valleys, gaps and glens, add charm to the scene and inspire delight in the lover of the beautiful and sublime, and while health is borne upon the breeze, beauty and grandeur fill the soul.

EDITORIAL.

THE NORTH CAROLINA MEDICAL JOURNAL.

A MONTHLY JOURNAL OF MEDICINE AND SURGERY, PUBLISHED IN WILMINGTON, N. C.

THOMAS F. WOOD, M. D., Wilmington, N. C., } Editors.
GEO. GILLETT THOMAS, M. D., " }

☞ *Original communications are solicited from all parts of the country, and especially from the medical profession of* THE CAROLINAS. *Articles requiring illustrations can be promptly supplied by previous arrangement with the Editors. Any subscriber can have a specimen number sent free of cost to a friend whose attention he desires to call to the* JOURNAL, *by sending the address to this office. Prompt remittances from subscribers are absolutely necessary to enable us to maintain our work with vigor and acceptability. All remittances must be made payable to* THOMAS F. WOOD, M. D., *P. O. Drawer* 791, *Wilmington, N. C.*

A NORTH CAROLINA SANITARY CONVENTION.

A "call" has been sent out for a Sanitary Convention to be held in Raleigh on the 6th February, 1889. It received the endorsement of the Mayors of our largest towns, Chairmen of County Commissioners, the members of the State Board of Health, Superintendents of Health, Chemists, and physicians in the private walks of life, illustrating what is really the fact, that sanitary study and practice belongs to citizens of every calling, and that the time has arrived for the representatives of the people, having these burning questions at heart, should meet together and discuss them. Through this agency several of the State Boards of Health have done distinguished service to the cause of public health, and we are quite confident that it will yield the same results in our State.

It is true that, by reason of the scattered rural population in many counties, the question of sewerage and water supply and other every-day matters are not immediately concerning them, but it is also true that some of our towns are already pressed to a solution of many of them, and their future business prosperity depends upon how they are solved. Ignorance of the best methods of sanitation is scarcely a less obstacle than the greedy efforts of speculators, who work up public opinion on sewerage and water-supply for their ulterior profit, both of which must be overcome, or disarmed of their harmfuless, and the only expectation of this happy result is the light which education gives. Even the sparsely settled counties have their interests in this matter. The whole country is ransacked for eligible sites for sanitaria, or healthy homes in our mild climates for large masses of people who are tiring of the rigor of Northern and Western winters. These counties can best study their own interests by studying the natural advantages of their soil and climate, for their own information and for that of the outside world, for North Carolina is still a *terra incognita* to a large part of the Union, thus helping the State Board of Health to give information which is now so often asked for by strangers.

It is not a pleasant thing to say, but we have a very low standard of sanitation generally throughout the State. The preponderance of the negro population in some sections has very much to do with it, but even where we cannot charge it on the indifference of the negroes, untidiness and neglect are the first things remarked upon by strangers.

The best way to overcome all this is, we believe, to meet together and talk over our neglects and their dangers, hear the questions mentioned in the "call" discussed by men of experience, and then take back to our homes an influence that will set the people and the authorities—the servants of the people—to work to amend our dangerous neglects.

We must all be agreed upon some well-digested principles whereby to manage epidemic disasters. Many have given the subject earnest thought and have some good advice to present. Upon this and all other questions of public health we want discussion, we want knowledge, and we trust that there will be a large attendance upon the

Convention, and that it will be a success. The idea originated with one of the younger members of the profession, which we take to be an index of the earnestness with which the younger generation has become interested.

If gentlemen intending to attend will send their names in to this office it will greatly aid the original promoters of the Convention, and, more particularly, if any one has a paper to read, if he will announce it in advance.

LET US OBSERVE PROPER DISCRETION IN ASKING FOR AMENDMENT TO OUR LICENSE LAWS.

The most noticeable thing in the history of our law regarding the license of physicians has been the wisdom displayed in despising not the day of small things. The development of the law, from a tiny seed planted in great weakness and in unpromising soil, has been rather in advance, certainly commensurate with, the progress of thought upon the subject of medical education. Not only have the people in the State, and the profession as well, shown their approval of the law, but other States have turned their eyes towards us with hopeful anticipation that some day they might be able to imitate our initiative. Other States have followed, and it is not too much to say that, to-day, our efforts to require better qualifications from persons intending to practice in our State and those of our sister State Virginia, begun several years later, form a basis upon which every State in the Union would like to establish a law. We have taken a stand far above the possibilities of the States having medical colleges, and we are forcing medical schools everywhere to do better work in qualifying students for the practice of medicine.

There remain several matters of amendment to make our law what it ought to be, and these points are being well matured by the gentlemen entrusted with them. Just at this point we need a word of warning. Numerous letters have been addressed to members of the profession, asking that they assist the writer, by influence and money, to secure certain amendments from the next General Assembly. As far as we know this gentleman is acting by his own prompting, and has no authority from the State Medical Society nor from the Board of Examiners. Our Society has never adopted the means intimated in the circular letters we allude to, that is, to fee a lawyer to lobby for the passage of a law. It is not to be commended for a moment, and we trust that none of the members of the Society will be contributors to the fund for the lawyer's fees, or assent to the amendments, until they are proven to be in harmony with the amendments which the proper committee may suggest. Our cause is a just one; we have succeeded when we were willing to await with patience the proper development of public opinion, and it would be folly to risk our advance now by exhibiting questionable methods or unmatured alterations. We need no other influence in Raleigh than that of the honest arguments of the trusted members of our profession, and these influences will be forthcoming at the right time. There is work enough for all to do, and if we need a lawyer to advise us as to the soundness of this or that desired amendment, let him be the selection of those duly authorized to prepare the amendment. If the committee is obliged to ask legal advice, it will be the first time, we believe, for the profession has heretofore wisely trusted such work to men of mature judgment and experience. *Let us observe proper discretion in asking for amendment to our license laws.*

A REGISTRATION OF PHYSICIANS NECESSARY.

The hope of the profession in North Carolina for its continued improvement depends upon the life and strength of the Board of Medical Examiners. It is a matter of just pride that the Medical Society of this State undertook in 1858 to protect the people of the Commonwealth from the dangers attending the employment of unqualified men, offering to practice medicine in any or all of its branches. This was the first movement in the United States that had an organized existence sanctioned by law and upheld by the intelligence of every community in the broad land. The time has come when the ranks of licentiates from this Board are so full of ardent, earnest men, middle aged and younger ones, that a further step is needed to complete the work already doing. There is a demand from these men that the law regarding the practice of medicine and surgery shall be enforced, and not remain a dead letter to be only observed by men too honest to evade any just demand made by the statutes of the State. To bring this matter to the attention of the prosecuting officers of the law in every judicial district, another amendment to the law appears to be needed, and this, it seems to us, will be completed when a registration is made of every man offering himself as a physician or surgeon, in the office of the Clerk of the Superior Court in the county where he intends to settle, justified by a license of the Board of Medical Examiners, or the production of satisfactory evidence that he is not amenable to the law by virtue of his being in practice before the passage of the act of 1885. This will occupy a year, at most, for fulfilment. At the end of this period it will be clearly the duty of the solicitors to present to the grand juries the names of all men claiming to be physicians and surgeons, who are not enrolled, for indictment and trial.

It is jnst as well that this matter should be brought home to the men who are working in violation of a plain law, and whose continuance in this infringement of the statutes of the State is subversion of good order. There can be no excuse for a failure to present these men after such time has elapsed as will afford opportunity to show cause why they should be allowed to remain undisturbed by the officers of the law in the practice of an honorable and honored calling such as the medicine, interpreted by the medical license laws of the State, holds up as a standard.

To this end it is timely to agitate this matter, and ask at the hands of the Legislature such an amendment to the law, as it now stands as will make registration compulsory and prompt. Of course, one registration will be all that will be required, and the records of the Clerk of the Superior Court in each county will be ample evidence of the right to practice medicine when a physician is once enrolled. It will be his right to receive from such clerk a certificate of his registration should he find it necessary or wise to change his residence.

We hope that our readers who are interested in this work—and who is not?—will see that their representatives are posted upon the merits of this matter and are prepared to assist intelligently any proper measure to make the law effective and satisfactory.

THE JOURNAL FOR 1889—SIXTEEN PAGES MORE PER MONTH.

The JOURNAL begins with this number the *twelfth* year of its mission. Its past history is too well known to be rehearsed now. We only desire to thank our friends for the support they have given us in the past year, as it has enabled us to add *sixteen* pages to each monthly issue. We believe the work upon the JOURNAL will improve now with each year, more especially if the promised aid for 1888, on the part of contributors, is made good for the current year.

The responses this year from subscribers have been gratifying, and in some cases liberal. If the JOURNAL could get 10 per centum of the money due for back subscriptions it would be able to do a great deal to improve its contents, showing that even medical journals have patrons who are neglectful of their credit.

Will not our friends try to extend our circulation? We will gladly send a specimen copy to any who are likely to feel an interest in the work, if names are sent to us.

We trust this may be a most prosperous year for the doctors of North Carolina, that all of our personal, professional and Society interests may develop and advance with unexampled solidity.

* * *

PROFESSOR JOSEPH LEIDY'S FRESH HONORS.—We learn from the *Nation*, December 20th, that the Cuvier prize of the French Academy of Sciences has been accorded to Prof. Joseph Leidy, the distinguished President of the American Academy of Natural Sciences. The *Nation* goes on to say: "This recognition is a just tribute to the work of one who has, with a degree of modesty uncommon to men of such eminence, kept himself well in the background amongst aspirants for fame and honors. There are probably few among the distinguished naturalists who are less generally known than Prof. Leidy, yet it is safe to say that during the last quarter of a century he has had no peer among the native-born, nor any co-laborer whose works have been held in higher repute by the savants of both Europe and America. As a comparative anatomist and microscopist, he easily leads the field; and if in the department of vertebrate palæontology he has seen rivals grow about him, it can yet be said that Dr. Leidy was the founder of the science in this country, and that to his pen belongs the records of the first important researches made into the extinct life of the Western Territories. To Dr. Leidy, likewise, humanity is indebted, in great part, for the determination of the nature of trichiniæ."

REVIEWS AND BOOK NOTICES.

The Medical and Surgical History of the War, etc. Part III. Vol. III. Medical History. Prepared under the drection of the Surgeon General of the United States Army. By Charles Smart, Major and Surgeon U. S. A.. Washington: Government Printing Office, 1888. Pp. 989.

The previous volumes of this great work are so well known to the profession that a description is not necessary, and a close perusal reveals that the work entrusted to Dr. J. J. Woodward's successor is of such uniform quality as to make no break in its literary and scientific continuity.

The very first thing which meets the eye in the opening pages is the horrifying account of the conditions of prisoners in the Southern and Northern prisons. Viewing it at this distance from the events, we cannot restrain the feeling of pity for the brave fellows on both sides who were made the victims of sectional hate. Northern people can have no conception of the condition of the Confederacy at the time such privations existed among the prisoners held in the South. It would be vain to say that all was done that could be done in the South or the North, for there was a stay-at-home legion on both sides of the line, who fairly gloated over the miseries of the disarmed soldiers, and who considered it a proper and commendable exhibition of loyalty and bravery to bring about any influences, political or military, to satisfy their hatred. Surgeon Smart found a difficult task in analyzing the records of the prison camps and hospitals, and the figures which have been preserved and presented to us, are not flattering to either side, especially to the South. But the truth must be told, and his duty is only to use such evidence as he can procure from the archives of the Government, and leave them to the arbitrament of the generations to come. This much must be said about this record, that all the material is in the hands of the triumphant section, and the utmost pains were and are taken to preserve everything to make good the Northern side, while the Southern records are fragmentary by reason of the destruction which was practiced at the closing of the war, and the personal statements of the survivors having their foundation largely in the memory, do not rise to the dignity of history, nor will they serve to rebut official testimony. For the sake of humanity, and it will be a happy epoch in our condition as a nation when the time arrives, when we can view the whole horrible story with the calmness of true historians, but this generation will probably not realize it. The writer has often thought that if the woful picture of prison life could have been drawn when the questions leading to the war were being agitated, it must have served to cool the hot blood of '61, and most certainly have filled many a soul with mortification to think what brutal desires were engendered among brethren by sectional war. That scores of medical officers on both sides, overworked, burdened with heavy cares, their desires for sanitary improvement overruled by inhuman or incompetent military superiors, stood up boldly for humanity, and by extra personal attention, far transcending the literal line of their duties, rescued many a fellow-being from death and destruction. A most touching account of an instance of this sort came to the writer's knowledge, in which a surgeon, Dr. J. H. Thompson, formerly in charge at Point Lookout camp, now an honored resident of Milwaukee, rescued a distinguished friend, one who has filled all the offices of trust and honor in the Medical Society of North Carolina, from the slowly approaching death in that prison. Their reunion after a period of twenty-five years was such as to give emphasis to the fact that whatever else our medical profession may lack, it does not lie in the direction of philanthropy.

Our digression was almost inevitable, and we must now return to the book itself and what the lessons recorded teach.

The record of *Malarial Disease* begins with Clinical Records of 52 cases, taken to illustrate "exceptional features which led to their being recorded." The Symptomatology of intermittents and remittents and pernicious fevers, and chronic malarial poisoning are given under separate paragraphs, leading up to post-mortem records and pathology. The latter subject, most always borrowed from foreigners in accounts by writers of American text-books, gets some practical elucidation here, and although the material is not large, it gives a fair basis of study in the cases. The editor has diligently compared the work of the best known writers on pathology, enriching it by foot notes, so making accessible a store of knowledge which will prove to be very acceptable to the student of this disease. "In summarizing the post-mortem records left by our medical officers" Dr. Smart says: "It is evident, not only that the condition of no one organ is the cause of malarial manifestations, but that these are due primarily to a morbid condition of the blood. In this way only may death be accounted for in cases characterized by alteration of the blood with but little enlargement of the liver or spleen. In this way may also be explained the pigmentary deposits associated with stasis of the blood, from engorgement as in the spleen, or from congestion or inflammatory conditions in other organs, as the liver, brain or intestinal canal.

"The change in the blood is presented as of two different characters: one in which it was thin and watery, with a tendency to effusion and separation of fibrin; and the other in which it became black and disorganized. The former was its condition in intermittent and chronic cases, as indicated by such symptoms as anemia, debility and effusion, and by the post-mortem appearances in those cases in which death occurred less from the intensity of the poisonous influence than from some accidental circumstances, as heart-clot or some complication. The latter was its condition during pernicious attacks. These changes were produced in the blood by malarial influence. If they are regarded instead as due to the action of the enlarged or softened spleen, which was so frequently present, the disorganization of the blood would be proportioned to the splenic alteration. But the presence of blood capable of continuing life in a patient whose spleen weight, 68 ounces (case 100 cited), is inconsistent with the idea of the participation of this organ in the disorganizing process. In other cases death occurred from altered blood, although the spleen weighed only a few ounces more than usual. The notably enlarged spleen is a characteristic of chronicity: it corresponds to a mildness of the poison, as where the disease occurs in temperate climates, or to an accommodation of the system of pernicious doses, where it occurs in highly malarious localities. On the other hand, in some of the fatal remittents the spleen was found to be unaffected. Instead, therefore, of regarding this organ as an active agent in the disorganization of the blood, its action may plausibly be considered as conservative, preventing dangerous congestions in other organs by its enlargement, and preserving the blood from that diffluent and black condition which is the concomitant and probable cause of the more dangerous pyrexial manifestations. It may be that the action of the spleen is mechanical: as suggested by Kelsch, the pigment-masses may be removed from the circulating blood by a process of sedimentation; but the hypertrophy which is so frequently found in chronic cases appears to indicate that there is a vital action involved in the removal of the malarial poison from the blood and in the regeneration of the latter after its disorganization by the morbific agent." Pp. 152–153.

The above argument as regards the conservative function of the spleen, is in substance the same as that set forth in these pages in an article on hæmorrhagic malarial fever, and we believe it has a substantial foundation.

We would like to follow the author in the exceedingly valuable contribution on the "Continued Fevers," as it was in this domain that his eminent predecessor, Dr. Woodward, made such valuable studies.

The extent of the contribution on "Continued Fevers" may be estimated by the fact that it occupies nearly one-half of the volume.

The record of "Spurious Vaccinia" in the Confederate Armies is a lesson in the history of the great prophylactic which deserves to be preserved in this substantial manner. Nothing has occurred in any country which has done more to cause the purification of the practice of vaccination, for we believe it was largely such facts, coupled with similar facts in the North, which stimulated Dr. Henry A. Martin, of Boston, to introduce animal vaccination, a practice which, since it has been rid of its objections, has restored Jennerian vaccination.

We trust that Congress will order enough of this volume to distribute them among the profession at large.

TREATISE ON THE DISEASES OF WOMEN. By ALEXANDER J. C. SKENE, M.D. D. Appleton & Co., New York.

The author of this volume has long been known among students of matters pertaining to gynecological practice, and his reports of his work have so commended themselves to the readers of the periodical medical literature as to beget a confidence in his skill and painstaking teaching.

This book contains the result of a busy life, devoted largely to the treatment of the diseases of women, and although its worth is very great, so enormous has the literature of this subject grown, that to be original is a hard task for an author to set for himself.

The preliminary chapters relating to methods of examination and the instruments necessary for them, have nothing new to comment on. The illustration of the patient in Sims' position, with the speculum introduced, and in the hands of the nurse is better than the very peculiar pictures that have marred most of the text-books of late.

Following the chapter on the development of the female sexual organs, which very naturally falls in the early part of the book, the author has introduced an anteversion, and he has chosen this place for this study, because he thinks that all displacements of the uterus forwards are results of a water development. This seems to us a rather sweeping statement, though in the main true.

The chapter devoted to injuries of the pelvic floor is quite full and instructive. The operations for the relief of this frequent source of the impaired health of women are fully described and illustrated by colored plates and wood-cuts.

In the chapter on fibroma of the uterus the author has very instructively introduced a chapter on electrolysis, with a compact statement of such of the elements of electro-physics as is neecessary for the intelligent use of electricity in gynecological practice. This will be a welcome addition to the general text-books which we have at present, as the electrolytic discussion of fibroid growths is a quite well established mode of treatment.

There is in the second part of this volume a very valuable addition in the study of the diseases of the urinary organs of women. The author has included in this general work the monograph that has long been before the profession on the diseases of the female bladder.

There is no work which has appeared of late that has more commendable features than the volume before us, and will be promptly placed among the better of the text-books on the subject of which it treats.

CASE OF EMPEROR FREDERICK III. Full Official Reports by the German Physicians and by Sir Morell Mackenzie. The Reports of the German Physicians Translated by Henry Schweig, M.D., New York, 48 University Place. Edgar S. Werner, 1888.

This is a stout octavo pamphlet of 276 pages, giving all the details of both sides of the shocking controversy between the German Surgeons and Sir Morell Mackenzie, now so well known to the profession.

To any one who desires to know more, and keep the record of the matter, this is a complete presentation of it all.

CORRESPONDENCE.

THE NECESSITY FOR REGISTRATION TO SHOW THE RIGHT TO PRACTICE.

MIRANDA, Rowan County, N. C., Nov. 27, 1888.

Messrs. Editors North Carolina Medical Journal:

MESSRS. EDITORS:—I take the privilege of calling your attention to a matter which I believe to be of importance to the whole medical profession of the State.

The law as governing the practitioners of medicine is, as it stands, practically inoperative. In case any one engages in the practice of medicine *illegally*, the proof of his doing so rests with the prosecutor or the State. It is impracticable to secure proof that a certain person has not been licensed by the Board of Medical Examiners. It is more impracticable to secure proofs of non-graduation—from every medical school. It is impossible to secure proof that a certain person did not practice prior to 1860.

Irregular practitioners are by far the most common in the rural districts—removed from centres where worth and education are recognized—most common where ignorance, with all its woes, allows the practice of quackery and charlatanry, not only without hindrance, but encouragement.

To obviate this fault (?) I would suggest the propriety of an additional clause to the present law, in substance requiring every practitioner to register his *legal right* to practice medicine with some specified officer in the county of his residence. This *legal right* being (1) his license; (2) his diploma; (3) a proven certificate from two or more reputable citizens that he has practiced medicine in their circle prior to 1860. Failure to register being held sufficient ground for recovery of penalties enumerated in existing provisions. Record to be open to the public—a suitable registration fee.

A difficulty seems to arise in the offering of a diploma from some unrecognizable institution for registration, and I must confess that I can see no satisfactory way of overcoming it. Still I trust that this difficulty will seldom present itself.

Some of my professional brethren with whom I have conversed on this proposed measure, have failed to accord it their unqualified approval. It ought not to be agitated, however, without the approval of the best part of the profession. Neither can a bill to the proposed end be introduced and passed without fostering.

What do you think of it?

Fraternally yours, E. M. Summerell.

ON THE USE OF PILOCARPIN IN PNEUMONIA.

Messrs. Editors North Carolina Medical Journal:

Dear Sirs:—On the 15th of October, about 11 P. M., I was called to see Dr. F., aged about 60 years, and found him suffering from severe cold, frontal headache and intense pain in the muscles of his shoulders and chest. Temperature 102 3-5° F. and pulse 110. I gave him hypodermatically ¼ gr. sulph. morphia and 1 1-20 gr. atropia, which soon quieted him.

I visited him again at 10 A. M. next day, and found his temperature 104 2-5, pulse 130 and respiration 24, accompanied by a deep tight cough. I then examined his lungs, and upon percussion obtained dullness over the area of the middle lobe of the right lung, and auscultation revealed broncho-vesicular respiration. He still complained of intense frontal headache, for which I prescribed a blister to the nape of his neck, and mustard counter irritants over the entire area of congested lung; ordered ℥ss. of sulph. magnesia to clear out his alimentary canal, and in one-half hour administered 10 grs. of antifebrin to reduce temperature.

At 6 P. M. I again visited him, and found his temperature 102, pulse 110; prescribed 10 grs. quinine, and in one hour 10 grs. more. Next morning, the 17th, at 10 A. M., his temperature was again up to 104 3-5, pulse 130 and respiration 28. Upon examination I found complete dullness and tubular breathing over the whole of the middle lobe of the right lung, exaggerated respiration in the left lung, and expectorating the characteristic rusty sputa. I continued the counter irritants over the inflamed area, and gave 10 grs. antifebrin, which in one hour reduced his temperature to 102.

Called to see him again at 6 P. M.; found his temperature 105, pulse 130 and respiration 30; prescribed 10 gtt. of fluid extract jaborandi every two hours during the night; at 10 A. M., next morning, the 18th, his temperature was 102 2-5 and pulse 110. I directed that the jaborandi be continued.

At 6 P. M., when I again called, his temperature had arisen to 105, pulse 130 and respiration 30. I then administered ⅛ gr. hydrochlorate of pilocarpin hypodermatically, and waited to observe its effect; in 15 minutes he began to sweat profusely and vomited considerably; in 15 minutes more his temperature declined to 100 and pulse to 96. I then ordered milk toddy and nourishment every two hours; and 8 grs. carb. ammonia in ℥ ss. liq. am. acetatis every four hours to liquefy the exudation and promote its absorption as well as expulsion.

From that moment his temperature gradually declined, until in two days it was normal; the dullness in his lung had subsided, and the normal vesicular respiration became reëstablished.

Case No. 2.—On November 6, at 2 P. M., I was called to J M., a boy aged 14 years; obtained a history of his having been taken two days previously with a severe chill and followed by a high fever, which had continued unremittingly up to that time, and accompanied by a deep, dry, hacking cough. I examined him thoroughly, and found his pulse 120, temperature 104 3-5, respiration 24; complete dullness and bronchial breathing over the area of the middle, and part of the lower, lobe of the right lung. I prescribed ℥ ss. of sulph. magnesia as a cathartic, applied counter irritants over the inflamed area, and gave 8 grs. of antifebrin to reduce temperature, and directed that when his fever declined he should have 20 grs. of sulph. quinine and 10 grs. of Dover's powder.

I called again at 9 A. M. next day, the 7th, found his pulse 110, temperature 104 and respiration 24; skin hot and dry. I gave him 8 grs. antifebrin to again reduce his temperature, and ordered milk toddy every three hours.

On the 8th, at 9 A. M., when I called, his pulse was 104 temperature 103 5-8 and respiration 28; a deep cough and rusty sputa. I gave 8 grs. antifebrin and ordered nourishment to be strictly given every three hours. Visited him again at 9 A. M. on the 9th; found pulse 114, temperature 104 and respiration 32. I then administered ¼ grain hydrochlorate of pilocarpin hypodermatically, which promptly produced great diaphoresis and nausea, and in one hour reduced his temperature to 100, pulse 90 and respiration 24. I ordered the nourishment to be continued as before.

On the next morning, the 10th, I found his pulse 78, temperature normal and respiration 18, his lung clearing up and the normal vesicular respirations returning.

E. B. GOELET, M.D., Brevard, N. C.

A FEW SUGGESTIONS CULLED FROM A CLINIC BY STEPHEN SMITH.

Messrs. Editors North Carolina Medical Journal:

MESSRS. EDITORS :—Thinking a few notes jotted down at a recent clinic by this distinguished surgeon would be of interest to your readers, I dare to ask for space for the same when convenient.

Prof. Smith utilized the time taken to anæsthetize the patient by describing the course he has pursued for sometime, looking to the prevention both of the immediate shock, in which in our everyday operations patients seem almost to die on the table, and from which they are rallied with so much difficulty; and the secondary shock, where the patient, doing well for several hours after the operation, suddenly dies—sometimes while you have turned away for a moment to wait upon him. By this treatment he has avoided the loss of a single case from either primary or secondary shock, although he has operated on patients who were apparently too feeble to stand the operation. In the present instance the operation was an amputation of the leg of a woman about sixty-five years of age, for a long-continued ulcer which had involved the bones of the tarsus as well as the malleoli. The prolonged suppuration had so reduced her that she might be generally considered as one in whom an operation could hardly result favorably. It is especially in this class of patients he would advise this course of treatment, but he prefers it in all cases. His treatment is based on the fact that persons in a condition of drunkenness require but little ether and do well after the operation, both as regards primary and secondary shock.

His method is this: Instead of giving the patient "a drink" a few minutes before the operation, he begins about eight or ten hours before, administering *small and repeated quantities* of the stimulus, and this is kept up to the time of the operation. He prefers whiskey or rum to brandy, because their action is slower and more lasting; and he gives it in *hot milk,* because that is itself a stimulant and is quickly absorbed from weak stomachs.

In the present case the administration of the stimulant was carried farther than he would have done. It was begun at 12 o'clock the preceding night, a half ounce of whiskey being given each hour from that hour until 8 o'clock; an ounce from 8 o'clock until 12, and an ounce and a half from 12 until the time of operating (3 P. M.) He cited the case of a young lady, suffering from an injury to her hip, who was anxious for an operation, but in whom every attempt to produce anæsthesia failed. After giving her an ounce of whiskey every hour from 6 o'clock until 11, the operation was done with the consumption of only about a tablespoonful of ether. The operation was quite extensive, about a handfull of necrosed bone being removed. He gives a small anodyne about an hour before operating.

He thinks that when it is necessary to amputate above the ankle, it is best to do so just below the tubercle of the tibia. Manufacturers of artificial limbs say that that portion of the stump from the tubercle to just above the ankle is of no service in the use of their apparatus; and statistics do not show a higher mortality from the higher operation.

As to the method of doing the operation, he advised against the old style of making a large posterior flap of the gastrocnemius. All we want on the stump is the skin and superficial fascia and the adipose tissue which lies between them. This will resolve itself in hard cicatricial matter that will resist any amount of pressure. Don't want any muscle, and he even goes so far as to dissect out the muscle rather than leave it. Thinks the circular operation not desirable for this part of the limb, as it allows but poor drainage and gives a very poor covering.

His method of operating is to begin his incision about three or four inches below the tubercle, according to the size of the limb. The incisions are similar on either side of the leg, and are carried in a somewhat circular manner (convexing slightly toward the foot) to the latero-posterior portion of the leg. There they turn upward and toward the median line of the leg, and meet at a point corres ponding to the point at which the bones are to be divided. The flap is then dissected up, care being taken to include the superficial fascia, which he considers almost as good a covering for the bone as periosteum itself. The rest of the operation is the same as in the ordinary circular operation. In sawing the bones he called attention to the advantage of rapid movement of the saw. He has discarded catgut in the ligation of the vessels because of its being absorbed too early with the danger of secondary hæmorrhage. Catgut within a wound begins to soften down within four days. He uses silk always in the ligation of large vessels, and prefers it even in the smaller ones.

To check all hæmorrhage "*for all time*," and to stimulate the wound, a solution of bichloride, so hot that the hand *cannot* be borne in it, is dashed upon the stump *from a pitcher*, the ordinary fountain syringe not supplying it in sufficient amount.

I will not consume space in describing the other steps of the operation, which were about the same as in other amputations. It is hardly necessary to say that strict antiseptic precautions were used, both in the operation and the dressing.

Chilling of the patient during the operation was avoided, certainly to a great extent, by hot-water bags, and the patient was to be placed in a bed already warmed in the same way.

The patient's pulse was full and slow throughout the operation, and the face red.

The stimulant was to be kept up, gradually reducing the amount, for three or four days. About two and a half ounces of ether were consumed.

The operation was done by the house-surgeon of Bellevue Hospital, where the clinic was held. J.

P. S.—At the succeeding clinic Prof. Smith announced that the patient died five days after the operation from pneumonia contracted by lying under an open window. He was certain that the operation was in no degree responsible for her death.

CLINTON, N. C., December 25, 1888.

Editors North Carolina Medical Journal:

DEAR SIRS:—On the 24th day of August, 1887, Dr. A. Holmes, of this place, assisted by Dr. Boyett and myself, performed supra-pubic lithotomy on a negro child four years old. An incision one and a half inches long from the symphysis was made and two stones removed—aggregate weight 482 grains. After removal of stones three sutures were introduced through the edges of the sheath of the rectus muscles; rubber catheter used for drainage, but no bladder-stitching and no catheter tied in—only used in operating. Result successful. R. H. HOLLIDAY.

READING NOTICES.

DR. F. H. DILLINGHAM, 344 Lexington avenue, New York City, writes: "I am now using Lactated Food in a case of typhoid fever, where it agrees better with the patient than anything else. It has also proved beneficial in several other cases."

'TIS HARDLY necessary to say anything in praise of PEACOCK'S BROMIDES, its reputation being so well established on true merit, and the therapy thereof so well known. Especially do I think it efficient in all peculiar neuropathic and neurasthenic conditions of hereditary and idiopathic origin. Even chorea yields when the BROMIDES and arsenic are exhibited persistently and continuously.

Baltimore, Md. W. R. LOWMAN, M.D.

MESSRS. ELI LILLY & COMPANY, of Indianapolis, have issued a work entitled HAND-BOOK OF PHARMACY AND THERAPEUTICS. The aim, as stated in the introduction, is to furnish the busy practitioner a reliable means of ready reference, at once concise, systematic and authoritative, to which he may refer with confidence in cases of doubt. Younger members of the profession and medical students will find this little work full of suggestions. It will be sent free to any physician, druggist or medical student by addressing Eli Lilly & Company, Indianapolis, Ind., mentioning this Journal.

DR. ESGUIVE, Colonization physician to the Paris-Lyons-Mediterranean Railway, Bon-Medja, France, March 28, 1887, says: "I tried BROMIDIA (Battle) on two cases of insomnia, which I had already treated for sometime with a mixture of equal parts of bromide of potassium and chloral. I noticed that hypnotic results were produced with much smaller doses of BROMIDIA than of the mixture of bromide and chloral. In a large number of cases it is important not to push too far the quantity of bromide of potassium. On this account I believe BROMIDIA is destined to be of real value, particularly in insomnia of cardiac origin, and I deem it vastly superior to the simple mixture of bromide of potassium and chloral."

THE USE OF PEPSIN IN THE LOCAL TREATMENT OF DIPHTHERIA AND MEMBRANOUS CROUP.—The field for the use of pepsin seems constantly extending with the improvements made in the quality of this agent, and it may now be employed with greater certainty as to results than ever before. The application of pepsin to digest away the membrane in diphtheria and membranous croup, is not new, and is more or less commended and resorted to by physicians in the treatment of these diseases.

Naturally, however, its utility depends entirely upon its digestive activity, and on account of the many preparations of pepsin of feeble or no digestive power heretofore at the disposal of physicians the results obtained have been in some cases discouraging.

As to the value of pepsin, however, in these affections when of proper purity and strength, there can be no question. We believe that the recent improvements in pepsin, securing greater purity, strength and permanence (we allude to the pepsin purum in lamellis of Parke, Davis & Co., which is the nearest approach that has yet been made to pure pepsin, and possesses more than twice the digestive power of any previously introduced), will lead to its extensive use in diphtheria and membronous crocp, maladies now attended with such grave results, even when combated by the most expert medical care.

It is to be hoped, and it is certainly highly probable, that the further study of digestive ferments will lead to the production of a pedsin still more active.

If the false membrane could be easily digested, and there seems no reason why it might not be with a pepsin of high digestive power, we could expect to have fewer grave cases of interference with respiration and blood-poisoning from absorption of septic material, now, alas, so frequent.

We have been interested in reading in this connection an article on the use of pepsin in the treatment of croup and diphtheria, by Dr. A. J. C. Saunier, published in the *Western Medical Reporter*, October, 1888.

Dr. Saunier discusses not only the use of pepsin, but also contrasts it with the results so obtained with trypsin and papayotin, to the disadvantage of the two latter agents.

His results we may briefly epitomize here in his own language. After discussing the prevalence of diphtheria, the mortality attending it and the different theories as to its cause, he says: "Whether we regard diphtheria as a local or systemic disease, there is no doubt but what it presents both local and general treatment seem to have had the best success in combating it.

"The three agents which have been most extensively used as local solvents for the false membrane of croup and diphtheria are papayotin, trypsin and pepsin.

"Papayotin is a vegetable agent recently introduced, claiming to have the same digestive properties as pepsin. I have had no personal experience with it. Dr. A. Jacobi, of New York, reports fair success by its use in a few cases. Dreyer, of Moscow, treated forty cases of diphtheria with papayotin, and gives the following conclusions: First. It exercises a feeble solvent action when the membrane begins to decompose. Second. The delicate new membrane is not affected by it. Third. It exerts no effect on the mortality of the disease. Its present high price is also somewhat against it.

"In the use of trypsin it is necessary to maintain an alkaline condition of the throat, as trypsin acts only in alkaline solutions. The secretions of the mouth and throat in these diseases is strongly acid, and tend to neutralize and destroy the power of the alkaline solution of trypsin.

"Drs. B. M. Van Syckle and J. Lewis Smith, of New York; J. A. Keating, of Philadelphia, and Saunders, of St. Louis, have all experimented with trypsin in the treatment of diphtheria with varying success, the best results being obtained when the throat was kept in a state of alkalinity by the use of the trypsin applied in spray form every fifteen or twenty minutes.

"Dr. H. D. Chapin, of New York, has made some interesting experiments in the solution of croupous membrane. He says an alkaline solution, not strong enough to act as an escharotic, had no influence on the membrane, or at most produced but slight softening.

Experimenting with trypsin he found that croupous membrane was dissolved in from fifteen to twenty minutes by the spray and by solution, the spray acting a little more rapidly than the solution. A A solution of trypsin required five hours to dissolve the mucus expectoration of phthisis.

" Pepsin solutions have been less used and less experimented with than trypsin, and yet this seems likely to give far better results than when it does come into more general use.

" A solution of pepsin will dissolve croupous membrane outside the body in from fifteen to thirty minutes, acting as well as trypsin, with the very important advantage that it does not require an alkaline solution.

" The reaction of the fluids of the mouth and throat in croup and diphtheria is markedly acid, and the great majority of local medicinal applications in general use are acid, hence the combination of pepsin with acid fluids can be more easily accomplished than the efforts to keep up an alkaline condition for the use of other solvents.

" Another very important point of difference is in the number of applications required: To keep up an alkaline condition for the action of trypsin requires an application every twenty or thirty minutes, and all will concede how trying it must be to patient and nurse to spray an unruly child's throat so frequently. On the other hand, the pepsin solution acts rapidly, needs to be applied much less frequently, and there is little tendency to a return of the membrane after it is thoroughly dissolved.

* * * * * * * *

" In regard to the form of pepsin, allow me to say that I have used several, and find that those which come in a scale or crystal form, so-called, are the most active, the powdered form being difficult of solution, and not seeming to possess the energy of the former.

" Two years ago I began the use of solutions of pepsin locally, with the same general treatment, since when my cases have made a more rapid and better recovery than when the same treatment without the pepsin was administered."

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ORIGINAL COMMUNICATIONS.

TETANOID FALCIFORM CONTRACTION OF THE UTERUS.

(R. P. HARRIS.)

ANTE-PARTUM HOUR-GLASS CONTRACTION OF THE UTERUS.

(HOSMER AND SMITH.)

By George W. Miltenberger, M.D., of Baltimore. Professor of Obstetrics, University of Maryland. Read before the Gynæcological and Obstetrical Society of Baltimore.

On the evening of October 19th, 1887, I was called by my friend Dr. H. M. Wilson, a most skilled and experienced accoucheur, as we all know, to see with him a case of labor, some six or eight squares from my office, and immediately responded. From the statement of the messenger I expected to meet with a case of difficult delivery in a primipara, but on entering the chamber of Mrs. ——— I was horrified on meeting the doctor to be told that his patient was dying, and to see a large, finely developed woman, 27 or 28 years of age, in the very agony of death. Total unconsciousness, two or three gasping respirations, a faint beat or two of the heart, when all was still and the scene closed. I immediately listened for the sounds of the fœtal heart, but not a throb responded; mother and child were both dead.

The doctor and the husband requested me to at once deliver the child, and learning that the doctor had already made a fruitless endeavor with Simpson's, and later Tarnier's forceps, and knowing thoroughly his experience and skill, and being told that with the instrument he could bring the vertex down to the vulva, but the moment traction was relieved the head flew back above the superior strait; I realized the inutility of their employment, and proceeded to perform version.

It was the first time in an experience of nearly fifty years that I had been called to deliver a dead mother of a dead child, and hope never again to be subjected to a like ordeal.

Upon introducing the right hand, supporting the fundus uteri with the left, I found a vertex presentation, R. O. I. A. position, head above the superior strait.

The os was perfectly soft and dilatable, not offering the slightest resistance, head movable, cervix soft and relaxed, not thinned nor distended, no strain upon the structure whatever. With the external hand I found, nearly up to the umbilicus of the mother, a deep furrow upon the external surface of the uterus corresponding to the so-called ring of Bandl, the contraction ring of Schroeder, the retraction ring of Lusk, the organ above this line being firmly contracted and retracted. The internal hand readily passing the head, met with a ring or constriction, corresponding to the external furrow, entirely too high for the internal os uteri, surrounding, most closely and tenaciously, the neck of the child, the head below in the soft, relaxed and not distended or stretched lower segment, the trunk in the contracted and retracted portion above. This band or constriction was as firm and resistant as a *rope of steel.* I could with the most determined effort force the points of one or two of the fingers between this and the neck, but for a time no further. I certainly never had felt anything like it before, but recognized the condition called by that eminent authority, R. P. Harris, of Philadelphia, "Tetanoid Falciform Contraction of the Uterus," and Dr. Hosmer and Dr. Thomas C. Smith, of Washington, D. C., "Antepartu mHour-glass Contraction of the Uterus," in the latter's valuable resumé of these cases in the *American Journal of Obstetrics*, Vol. XV., November, 1882. I, for a time, feared I would be foiled, but after a most determined effort, I finally succeeded in passing it and ultimately reaching the foot. Still the resistance did not entirely yield, and it was only after further powerful and persistent effort that the constriction yielded and I was enabled to turn and extract. I am convinced that I could not without injury have succeeded during life. The placenta was then removed without further difficulty.

I then learned from Dr. Wilson the previous history of the case. Five days before the membranes had ruptured and waters had been discharged.

On the morning of the 19th he was called at 6 p. m.; found pains of first stage, soft parts of pelvis relaxed and well lubricated, vertex representing R. O. I. A. position, as far as he could determine, the external os still closed. Upon returning in two hours, at 8 a. m., os was dilated to size of a dime, edges soft and thin, and he then remained with her uninterruptedly until the fatal close, so that she was constantly and closely watched, and every possible attention and care bestowed. Everything seemed to progress favorably, with occasional, but not inordinate nausea and vomiting. The advance was slow and gradual, and about 5 : 30 p. m. the os was sufficiently dilated to apply the forceps, which was cautiously and carefully done. Simpson's were first used, there being no difficulty in their adjustment. No advance, however, could be effected, and they were removed and Tarnier's applied. With the latter he could cause the caput to appear at the vulva, but when the pressure was relaxed it would instantly recede to its former position.

It was at this juncture I was sent for, and the doctor finding her pulse failing resorted to all means of resuscitation, but she died in about 30 or 40 minutes. The patient had had chloroform administered at the height of her pains, previously to the use of the forceps, but only to the obstetric degree, not to full anæsthesia or unconsciousness. With the application of the forceps full anæsthesia was induced and maintained, yet the obstruction was not in the least overcome or affected, and even after general or somatic death, the steel-like band remained apparently, and certainly practically, as persistently contracted as before. And this has been the history of nearly all these cases as yet observed. In Dr. Baltzell's case, one of the first on record in this country, occurring in Frederick county, Maryland, the woman had been twice freely bled, forceps had been repeatedly used, version had been attempted, and yet, at the autopsy, 4 hours after death, the constricting ring was still hard, firm and unyielding.

This whole case is replete with interest and at every point. In the first place, up to 1882, the date of Dr. Smith's paper, he had found on record, and authentic, 33 cases occurring in 30 women; in the second place, they have all, or nearly all, occurred in the hands of obstetricians, of acknowledged skill and experience, very many of them having been under the observation of recognized masters in the art; in the third place, they have resisted very generally the most enlightened and persistent efforts at relief; in the fourth place, the mortality has approved appalling; in 33 labors of 30 women, 8 women and 25 children were lost, 3 women dying undelivered; of the whole number 7 were primipara, of whom 4 died.

The mere mention of some of those who have treated and recorded these cases suffices to show that everything which intelligent knowledge could effect was done. Drs. Hosmer and Stone, of New England; Dr. T. A. Reamy, of Cincinnati; Prof. Elliott, of New York; Prof. J. Y. Simpson, of Edinburgh; Drs. Tabor Johnson and T. C. Smith, of Washington, D. C.; Angus McDonald and others. Forceps, version, V. S., opium, to full extent, chloroform to surgical anæsthesia repeated and continued, craniotomy have all been resorted to, and all with like result. And even where these means, or greater part, had been used, in more than one case, as I have said, the unyielding bone-like or steel-like structure, has persisted even after death. The character and history of these cases has led to their being termed by Harris, "Tetanoid Falciform Contraction of the Uterus," by Smith and Hosmer, "Ante-partum Hourglass Contraction of the Uterus." Their whole history is that of spastic contraction. This could only occur in muscular structure, and the question immediately arises as to its seat, whether, as believed by Hosmer and others, it is at the internal os, or whether, as more generally believed, it is in the muscular structure above that point. In the majority of cases the observers have stated it was at a point too high to correspond to the internal os, even at times, by those who have doubted whether any such condition as post-partum hour-glass contraction ever exists. So acute and experienced an observer as Dr. Reamy says of one of his cases: "It seemed certain that the band of constriction did not pursue a direction corresponding to the os internum." In the case of Dr. Arnold, of Roxbury, Mass., "the constriction was about the upper third of the uterus, encircling the child and inclosing its hips and lower extremities." Dr. Gray states of his case, seen in consultation: "The uterine contraction was not that of the os uteri, but existed above it. In this he could not be mistaken."

One of the most important and satisfactory instances is that of Dr. P. R. Shaver, of Stratford, Ontario. It was a case of twins, and he states and reiterates "that one child and its placenta were distinctly contained in the lower compartment, the second child and its placenta in the second and upper compartment above the stricture. Now, as a child and placenta could not have been contained, and going on to term in the cervical cavity, the seat of constriction could not have been at the internal os. In the case I now report the constriction was certainly too high for the internal os.

Where, then, could it be?

These cases differ from those of Bandl, for the history and etiology of which we owe him so much in connection with rupture of the uterus. In cases of rupture almost uniformly we find some mechanical resistance to the progress of the child, in advance of it, by contracted pelvis, by mal-presentation of fœtus, by too large size physiological or pathological of the latter; we find the lower uterine segment elongated excessively, thinned until almost like paper, stretched and distended to the utmost and ultimately ruptured. In these the obstruction is above the lower uterine segment, clasping some part of the child, the inferior segment itself soft, yielding, not thinned, not stretched, and rupture not occurring. I cannot see that it can occur elsewhere than in the musculature of the body of the uterus, entirely above the os uteri internum, and constituting a true ante-partum hour glass contraction. If, then, it is in the body of the uterus, can we determine its special seat and mode of production? Dr. Smith quotes Dr. Parish, of Philadelphia, in a discussion of post-partum hour glass contraction in 1879, as saying: "Prof. Hélie has demonstrated the existence of bundles of fibres running obliquely from either side of the body anteriorly and posteriorly to the fundus." Prof. Hélie states that a spasmodic contraction of these fibres in one-half of the uterus would divide the uterus into two compartments, one of these being that portion of the cavity into which either Fallopian tube opens, i. e.. "the infundibulum," and the other compartment being the rest of the uterine cavity. Prof. Hélie states that he has twice verified this by most careful digital examination, and, in each case, had to dilate the closely constricted portion to remove the incarcerated placenta."

Continuing, Dr. Parish goes on and states: "I have been informed by Dr. R. G. Curtin that, in Cæsarean section performed by himself, a sulcus, transverse in direction, was seen to come and go in the body of the uterus. This sulcus, in the external surface, was evidently due to contraction of bundles of transeverse fibres in the middle of the body, for after the uterine incision had been closed, there was noticed an irregular gaping of its edges at the time of the formation of the transverse groove. A spasmodic contraction of the fibres that produced this shallow furrow, could have undoubtedly produced a marked hour-glass contraction of the body of the uterus. There was no abnormal alteration of tissues in the uterus. "This furrow seen by Dr. Curtin was evidently the so-called ring of Bandl, which I have more than once felt and seen.

In the case of Sænger's operation by Dr. Neale, in 1887, this furrow could be plainly seen through the abdominal walls by the most superficial observer. The oblique fibres so well described by Prof. Hélie, will not account for this furrow, or for the condition to which I have called your attention. To probe this matter a little further, I must beg your patience for a time while we examine a fragment of anatomical and physiological history, which may throw some light upon it, and I am the more disposed so to do as our textbooks are not very clear upon these points, and as I know that the views, not only of students, but of practitioners, are too frequently obscure and their knowledge but partial, taking words for things.

Although as far back as the 17th century some, as DeGraaf (1671), Verhagen (1701), Weitbrecht (1750), held that the cervix remained unchanged until the end of pregnancy, Roederer, in 1753, asserted the expansion of the cervical canal, and shortening, advancing regularly from above downwards, and commencing as early as the sixth month. This continued the prevailing doctrine until

1826, when Stoltz insisted that the cervix was unchanged in length until the last fifteen days of pregnancy, and then the internal os opens, the cervical canal dilates from above downwards, and the cervix is gradually effaced, softening beginning below and extending upwards, shortening beginning above and extending downwards. In 1862 I. E. Taylor, of New York, made some important observations, showing that the cervix did not shorten, at least in many instances, until the inception of labor. W. Braune, in 1872, followed by Bandl, in 1876, and A. Martin, in 1877, returned to, and revived, the old doctrine of Roederer. Braune saw in the frozen cadaver of a woman dying during labor the lower segment of the uterus very much thinned, and above this thinned portion a determined wedge-like muscular ring projecting into the interior of the uterus, the ring of Bandl, which he locates at 4 to 6 inches above what is generally recognized as the ring of Müller.

Now, this ring of Müller is the os internum, while above this is the aforesaid wedge-like projection of Braune or ring of Bandl, or the second os internum of Scanzoni, between the body proper and the lower segment of the uterus. Braune and Bandl teach that during the last ten weeks of pregnancy the lower segment of the uterus and the upper part of the cervix soften, the latter dilates and permits the entrance and descent into it of the lower part of the ovum, thus forming what has been termed the cervico-uterine canal of Braune, the wedge-like ring above being the real os internum, this dilated portion being the cervical canal at its upper part, and therefore that the cervix does shorten during pregnancy. Scanzoni, Müller, Barnes, Holst, Schroeder, Duncan, Taylor, Spiegelberg, Hoffmeier and others have proved that the os internum does not, as a rule, open before labor, nor the neck shorten. The latest examinations upon this subject are by Hoffmeier and Benckeiser, 1888, who fully sustain this view. They show by their sections of uteri, unimpregnated and pregnant, that the uterus is divided into three parts or segments, the upper part of the body, the Barnes' zone, just above the neck and the cervix. They, I think, have demonstrated that the cervix, as a rule, does not open above or shorten until labor sets in, that above the os internum the lower zone is narrow in the unimpregnated organ, differing in histology and structure from the cervix and from the upper part of the corpus. The cervix retains all its characteristics up to labor. In the latter months the lower zone thins, dilates, and between this and the upper zone is found the ring of Bandl. All these latter find the os internum evident at time ot labor, and Bandl's ring entirely above it.

What, then, is this so-called ring of Bandl? It can only form at the junction of the thickened wall of the corpus uteri, with its middle or medullary layer, as described by Savage, with the lower segment, which is so much thinner. Both the fundus and the lower uterine segment are materially thinner than the intermediate portion. The latter is often two or three times as thick as the lower segment. The effect of contraction, then, would be felt particularly in the distension of this lower segment. The tissues there are thinner, fibres are more nearly longitudinal, and therefore offer a weaker resistance. The weight of the ovum, when the woman is erect, presses upon this part, and the action of the abdominal muscles is transmitted in this direction. Barnes has worked out practically the same thing with regard to his cervical zone or zone of danger, in connection with the natural history of placenta prævia.

The ring of Bandl and of Braune is certainly not the internal os, and it can only be found and formed at and by the lower edge of the medulla, where this plexiform layer thins out and loses itself in the cervical segment. Barnes' specimen distinctly show this well defined lower segment, which is clearly distinguished from the body above by three features: 1. It is thinner. 2. The muscular structure is less marked. 3. It is less rich in vessels. This lower segment is divided from the body by a more or less marked ridge, which goes all around the uterus, Bandl's ring. From this ring upwards the walls of the organ begin to be richer in vessels, the wide lacunæ of the middle layer begin, and corresponding to this line on the outer wall, larger vascular trunks run in and out of the uterus. This boundary between the body of the uterus and its lower segment is easily felt in the living organ at the level of the pelvic brim, and has been called by Lahs "the pelvic brim ring or stricture." It can be felt on introducing the hand to practice version, and often when the hand is introduced to remove the placenta. One again sees the difference in structure in the two portions. in well-developed uteri which have been sometime steeped in alcohol, the middle medullary layer of the body of the uterus ending in a point downwards, between the inner and outer layers of the lower segment. The marked development of this lower segment begins at a date not exactly determined, but the walls are observed to become softer towards the seventh month. The title, "Pelvic Brim Ring Lahs," would not be very precise, the name of Bandl's or Baune's ring would not express the truth, as they both consider it the os internum. The better name would be the contraction ring of Schroeder, or the retraction ring of Lusk, as it is at the junction of the corpus with the lower or cervical zone, at the level or line where the middle, thick or medullary layer ceases, and when in obstructed labor it becomes largely displayed, as when rupture is threatened, when it is evident to palpation through the abdominal walls, and even to the sight, as I have seen it, and more than once, it is clearly due to this extent to the contraction and retraction of the upper thicker walls of the body of the uterus. In the light, then, of thorough examination by the most competent observers, and of practical experience, we are forced to the conclusion that this seat of the constriction is the lower edge of the medulla, the so-called ring of Bandl. As yet we are not able to trace or determine the disposing cause for its appearance. It is true that in a considerable proportion of the cases recorded the waters have been early, and in some long evacuated. But we know how often this occurs without such result, and in many of these cases it did not present. In Bandl's cases of rupture or threatened rupture, to which he particularly and so intelligently called attention, this constriction or hour glass contraction was situated at the same point, the wedge or ring was produced at the same site and in the same manner, and there was always an obstruction before the presenting part of the child, when, of course, the contraction of the medullary and fundal portions of the uterus, with their retraction, must produce this effect; and the cause is evident and at once appreciated. In this category, however, there is generally no such obstruction, and the producing cause, so far, eludes our grasp. It is certainly, however, important to learn and determine its true seat and character. Nor is this question one of simple, theoretical interest, but one of the utmost practical import as to the treatment.

With the inefficiency of the treatment heretofore employed, the question would very naturally arise, and it has been suggested by Harris and Hosmer, whether we should not resort to Cæsarean section (Sanger's). If we take it to be at the internal os, this almost settles the question at once, as it would violate one of the fundamental laws of that operation, to respect, in our incisions, the cervix.

Apart from this, however, we have the difficulty and delay in diagnosis. The only general symptom in these cases has been the early discharge of the liquor amnii, by no means followed necessarily or usually by this result. After this we have only the delay, until by this we are led to attempt extraction by one or another mode. Here, however, would come into strong relief the precious results of systematic external exploration by palpation, so useful, so pregnant with information, unfortunately so systematically neglected. If by palpation we detect Bandl's ring, we know there is danger imminent, we know we cannot longer delay and wait, we are told at once that the period of expectancy has passed. It may portend rupture, it may be this hour-glass contraction, and in either case we must take the labor, and at once, into our own hands. But upon this external examination alone we should not found our absolute and special decision. This could only be done upon thorough internal exploration and the detection of the constricted ring. But trusting to internal exploration alone, we find the head movable at the superior strait (there were only two cases of breech presentation), the os soft and dilatable, the cervix not thinned nor stretched, and almost intuitively and instinctively the practitioner would apply the forceps, and then only learn the impossibility of extraction. The hand then introduced beyond the head, probably if the obstetrist were ignorant of this condition with the intent to turn, would find the fatal steel-like band. If the attendant be aware of the possibility of this accident, if by palpation he discovers the contraction ring or retraction ring, he would at once pass the hand above this presenting part, and if he finds the ring, learn at once with what he has to deal. Now, if this were at the os internum, Cæsarean section would be almost forbidden, or at least its hazards would be vastly increased; if it be found situated where I have stated, and where I am sure it is, with the inefficiency of all the means heretofore employed, I deem the modern Cæsarean section would find its place, as in cases of threatened rupture, where the obstruction in advance of the child could not otherwise be removed.

Up to 1882 Dr. Harris, whose opinion is of so much weight and value that I should hesitate long before differing from him, was disposed to take this view, but not until turning had been attempted.

But from all that he has later so well taught as to the propriety and superiority of early operation, and the great disadvantage of prolonged or active manipulation before the use of the knife, I think he would speak more positively as to the advisability of the early operation after a diagnosis were once certainly made.

This imperfect resumé of facts, for facts they are, upon this so important structure, justify us, I think, in coming to certain conclusions.

1. That a true "Hour-glass Contraction of the Body of the Uterus," (Smith and Hosmer) a "Tetanoid Falciform Contraction of the Uterus," (Harris) does occur during labor, and constitutes one of the most serious difficulties of the process.

2. That by palpation it may be detected in a large portion of these cases.

3. "Clinical facts demonstrate that the segment of the uterus below the stricture is in a relaxed condition, and only in exceptional cases is thinning thereof to be recognized." (Smith.)

4. That from anatomical and post-mortem examinations most carefully conducted by most astute and reliable anatomists and pathologists, supported by clinical observations of the most searching character by obstetrists, acknowledged as masters of the art, this ring or contraction, the ring of Bandl, the contraction ring of Schroeder, or the retraction ring of Lusk, is not at the internal os uteri, but above the lower segment, the cervical zone of Barnes, at the lower edge of the body of the uterus, or of the medulla of Savage, and is produced by the contraction and retraction of this upper part of the body.

5. That this fact, once established, while we cannot yet positively formulate their treatment, their mortality has been so large and the success of the modern Cæsarean section has been so great, that it speaks strongly in favor of the latter.

One word in conclusion in connection with the case of Dr. Wilson: I have been asked whether, in view of the history of this case, there might not have been a rupture of the uterus. Having this possibility in view, after my recognition of its character, I most carefully, in my manipulations, examined every part of the organ, and can state positively that no such lesion existed.

Hemorrhage certainly was not the cause of death. It may have been due to embolism, but in the absence of a post-mortem, we would not be justified in such an assertion.

In the 30 women whose cases were collected by Dr. Smith, there were three cases of contracted pelvis—1 of shoulder presentation and 1 of fibroid before the child, partly filling the pelvis.

In only one case was the cervix thinned, and that was reported by Bandl, being a face presentation.

There was one case of rupture [Case 15], but the reporter states an amount of force was used which, under other circumstances, would be unwarrantable, and that external pressure was made over the head, the rupture being a bruised laceration at this point, where pressure had been made upon the head in the attempt at version.

ADDENDA.

It is of interest and importance to note that these various anatomical details have been worked out with reference to this special accident.

Since writing the above two interesting cases have come to my knowledge; the one at full term reported by Dr. S. T. Earle, of Baltimore; the other at six months, by Prof. T. A. Ashby. One mother lost and both children.

Results of new Cæsaerean Section; Sanger; by Dr. Harris, September, 1886 (*Medical News*):

In Germany 84 per cent. of women saved

In Austria 50 per cent. of women saved.

In Italy 50 per cent. of women saved.

In France 100 per cent. of women saved—only two cases.

Potocki, in June, 1886, gives the following table of operations done at Dresden and Leipzig:

Ten by Leopold and his assistant Korn, and 6 by Sanger and his assistants Obermann and Donat. Fifteen recoveries for mothers, 93.7 per cent.; 16 children living—100 per cent.

If we add to these 3 cases at Innsbruck, all of which were successful, we have 19 operations and only 1 woman lost.

Caruso gives us the very latest data of the new Cæsarean operation: Up to October 1st, 1888, comprising 135 cases, 6 successful cases in addition are known to Caruso, but the details necessary for publication were lacking.

The results are 74.44 per cent. of recoveries among mothers in all cases, and 91.73 per cent. recoveries among children.

The mother has three chances out of four, and her child nine out of ten for life with this operation. What a contrast with the results of these cases in this paper, in 36 cases occurring in 33 women, 10 mothers and 28 children were lost.

CANCER OF THE LIVER.

A Clinical Lecture delivered at the Hospital of the University of Pennsylvania, by WILLIAM PEPPER, M.D., Provost of and Professor of the Theory and Practice of Medicine and of Clinical Medicine in the Univ. of Pennsylvania.

Reported by William H. Morrison, M.D.

GENTLEMEN:—I have here a rather unusual specimen of cancer of the liver. Cancer of this organ assumes two forms—sometimes appearing as an almost isolated mass, standing out more or less from the surface of the organ, at other times appearing as an infiltration of the organ, the less will the irregularity be, while on the other hand, the more it consists of isolated masses projecting from the substance of the organ, the greater will be the irregularity of outline. There are many cases in which the diagnosis depends, I will not say entirely, but largely hinges upon the question of the regularity or irregularity of outline or the smoothness or inequality of the surface of the liver, as to whether it is a case, for instance, of hypertrophic cirrhosis or one of cancer of the organ. These two forms of cancer, the nodular and the infiltrating, frequently coexist to a certain extent. I cannot say that one or the other is more apt to occur when the disease is primary in the liver or is secondary to cancer of some other part.

The liver, as you know, is one of the organs in which cancer may be present as a primary disease. It may also appear in the liver secondarily to cancer of the stomach, of the pancreas, of the intestine, of the abdominal glands, or secondary to some of the varieties of external cancer.

The physical signs of cancer of the liver consist, first, of increase in the area of percussion dullness, which may extend upwards, but is also very likely to extend downwards. The enlargement may involve only the right lobe, or it may even affect only the left lobe. More commonly it affects both, but the enlargement is irregular. When the hand is passed over the portion of the liver projecting below the margin of the ribs, there is apt to be inequalities felt, what is known as a nodulated surface. The sensation imparted to the hand is entirely different from that imparted by an enlarged syphilitic, leucæmic, amyloid or cirrhotic liver. In all of these cases the enlargement of the liver is symmetrical, preserving its normal outlines, the surface is smooth, or, at most, only finely granular. In a case like the present we should have had a series of inequalities readily recognized by the hand. This nodulated condition of the surface of the liver is of extreme importance from a diagnostic point of view, and is usually present, even when there is no distinct tumor projecting from the substance of the organ. In connection with the nodulated surface we often find distinct masses projecting from the surface. Such masses were not present in this case.

Laying the liver open, we find that its substance is studded throughout with these cancerous growths of all sizes. There has been more or less inflammation of the peritoneum covering the liver, as is usually the case in this disease. Here we have in many places marked retraction of the surface of the liver. This is well marked in the left lobe, and in cutting into such a spot we find a hard, cancerous formation, involving the entire thickness of the left lobe. In fact, the inequality of the surface in this instance is due more to retraction of the tissue over the cancerous masses than to projection of the growths from the surface.

The gall-bladder is often involved in cancer of the liver. Its walls may be the seat of chronic inflammation, as is the case here to a marked degree, or they may be the seat of cancerous deposits. Here the walls of the gall-bladder are much thickened, its cavity contracted and occupied by a quantity of mucus stained with bile. The cancerous formations have involved the cystic duct, causing occlusion. This specimen will show you why it is that gall-stones occur so frequently in cases of cancer of the liver. As a result of the obstruction of the cystic duct, which is so commonly present, little concretions form in the bladder upon which layers are subsequently super-imposed. This question of the presence or absence of gall-stones is of importance from a diagnostic stand-point.

Having shown you the specimen, let me next give you a brief history of the case: The patient was a married woman, aged 61 years. There was no history of cancer in any member of the family; the mother died at the age of 90 years, and the father at the age of 50 years. She had been always a healthy woman, but had worked hard for the past fifteen years. In the autumn of 1887 she discovered a tumor in the right mammary gland. On February 9th, 1888, the tumor, with the entire breast, was removed. For several months before the tumor in the breast was noticed she had pains in the shoulder which were called rheumatic. She remained well for about six months, but in July she began to suffer with pain in the right hypochondriac region. The pain came on at night, and at first was distinctly periodic, but after a few weeks it became constant and was described as dull, heavy and aching, sometimes shooting down into the right groin. About October 1st she noticed that she was enlarging about the waist. From this time she grew worse rapidly, and when she came to us, on October 30th, the pain was constant and severe, she was greatly emaciated and her appetite was poor. There was a cachectic appearance, but at this time there was no jaundice. In the supra-clavicular fossa of the right side there was an enlarged gland the size of a hickory-nut adherent to the tissues beneath and partly adherent to the skin. There were two or three pea-sized nodules in different parts of the skin. On the left breast there was a large indurated ulcer with retracted centre. The tissues around were red and infiltrated. The breast was filled with small nodules. There were several enlarged glands in different parts of the body. There were no pulmonary lesions. The abdomen was distended and numerous large nodular masses were felt beneath the skin. The hepatic dullness began at the sixth rib and extended to the umbilicus. On palpation the portion of the liver below the margin of the ribs was found to be rough and nodulated. There was also œdema of the right arm.

The patient continued to fail. On November 16th it was noted that the conjunctivæ were yellow. On the 18th the jaundice had deepened and the patient was wandering. By the 20th she was in a stupor, in which she remained until her death, on the 23d, in complete coma.

In the present case the diagnosis was rendered perfectly clear by the fact that there had been cancer of the mammary gland, by the presence of numerous enlarged glands in different parts of the body, and by the existence of numerous nodules in the skin, all evidently cancerous. When we have a history like this, with such widespread evidences of disease, the diagnosis is very simple. There is, however, one caution to be given: After a patient has had an external cancer removed, there is great tendency, if symptoms of internal trouble arise, to at once assume that there is a secondary formation of cancer going on. There is no reason why a person who has had a cancerous breast removed may not have a simple pleurisy of the same side at some subsequent period, but under such circumstances the tendency is to at once assume that cancer is developing in the pleura. This only too often proves to be the case, for it is exceedingly common to have secondary involvement of the pleura in cancer of the breast, but we should never fail to demand of ourselves proof that the internal lesion is malignant. In our patient there was no doubt as to the diagnosis, for the body was widely affected and cancer was developing in many places. When we first examined her there was already the characteristic nodulated surface felt on examining the liver and the characteristic induration to the edge. In addition to this we had the severe pain and later the jaundice without dropsy.

The symptoms of cancer of the liver are, in the first place, pain in the hepatic region, radiating in different directions, sometimes to the back, sometimes to the shoulder and sometimes into the abdomen. This pain is a conspicuous feature and almost always present. In the second place, jaundice is a very common symptom of cancer of the liver at some period of the disease. By looking at the specimen before you you can readily understand why this should be the case. It could scarcely happen that, with so many large nodules growing in the liver, the biliary duct should escape compression. It is only wonderful, when we see the number and size of the nodules here present, that jaundice was not an early and intense symptom, but as you have already heard, it did not appear until a week before death. Dropsy is not a symptom of cancer of the liver. It occurs only in rare instances where the portal vein is compressed by a cancerous nodule in the transverse fissure of the liver. Although the cancerous masses in the substance of the liver press upon the small veins, yet the collateral circulation is so free that no effusion results. Other symptoms are paleness and progressive loss of strength and emaciation. These symptoms, progressing steadily and becoming associated with jaundice, and the physical signs relating to the liver to which I have already referred, render the diagnosis of malignant disease positive, although there may have been no external cancer.

With what would you be apt to confound cancer of the liver? Imagine that in this case there had been no primary external cancer, but that the patient had begun to complain of pain in the right hypochondriac region recurring periodically. There may be in these cases a history of recurring pain lasting for a long time before any enlargement of the liver can be demonstrated. This pain is dependent upon the formation of nodules deep in the hepatic substance. If they do not press upon a bile duct and cause some jaundice, the case may be treated for a considerable time as one of neuralgia of the liver, just as you may treat a case of cancer of the stomach where the disease is in a portion of the viscus where it does not induce vomiting or cause obstruction of the pylorus, but which is attended with recurring spells of pain like those of gastralgia, as one of gastric neuralgia for a long time before it is possible to demonstrate organic disease of the organ. This pain, both in the case of the stomach and in that of the liver, may continue for a considerable time, so much so that in marked and intractable cases of this kind, where there is decided impairment of the general health, the suspicion of malignant disease should always be entertained.

Again, it will not infrequently be found difficult to distinguish between cancer of the liver and gall-stones with a moderate degree of hepatic enlargement. As I have already stated, it is exceedingly easy for gall-stones to form in cases of cancer of the liver. If a patient with incipient cancer has a nodule near the gall-bladder involving the duct, gall-stones form, and the patient has spells of hepatic colic. When these attacks pass off there is temporary improvement, but all the time there are signs of trouble about the liver. Perhaps the jaundice diminishes after the attack of hepatic colic, but it does not disappear entirely. Where such symptoms occur in an elderly person where there is a certain amount of enlargement of the liver, but where no actual tumor can be demonstrated, there will be extreme doubt as to the exact nature of the case. I saw such a case yesterday, one which has interested me greatly. The patient, a man of 73 years of age, was seen by me for the first time last spring. He had then been jaundiced for six months, and had suffered with spells of pain in the right hypochondriac region. These attacks were attended with a great increase in the intensity of the jaundice. He had lost twenty or thirty pounds of flesh. The liver was not enlarged, there was no distinct tumor, and there was no irregularity that could be made out. Various plans of treatment were tried without benefit. The suspicion of malignant disease of course presented itself, but the fluctuations were so marked, and the improvement in the intervals between the attacks so decided, that, as there was no enlargement of the liver, I became convinced that the case was not one of cancer, but that the patient was suffering with severe catarrh of the bile ducts with the presence of gall-stones, and that in all probability the stones were so large that they escaped with great difficulty. The condition went on from bad to worse. The patient was confined to bed and the jaundice persisted. The emaciation became more marked, and probably fifty or sixty pounds of flesh in weight were lost. A few months ago there was a sudden discharge from the bowel of a large quantity of tarry bile. This was accompanied with almost fatal collapse. It was estimated that between a pint and a quart of this matter was discharged. Since then the patient has been getting better. He is now gaining flesh and the jaundice is relieved. There evidently had been obstruction at some point which was relieved by ulceration of a gall-stone into the intestine. In cancer of the liver the symptoms do not fluctuate except when the condition is complicated by the presence of gall-stones. After the attack of hepatic colic is relieved, the acute symptoms pass away, but between the attacks there is no material improvement in the condition of the patient. The course is always downward.

There is another point of importance in the diagnosis. Cancer of the liver is not accompanied by fever. Where there is inflammation of obstruction of the gall ducts by inflammation with gall-stones, there is more or less fever. The presence or absence of fever is an important element in the diagnosis of cases of hepatic disease attended with enlargement of the liver and with jaundice. I would not be understood as saying that fever is never present in cases of cancer. There will in such cases sometimes be a considerable amount of peritonitis, which will induce fever for a time. The cancerous cases may become the seat of central degeneration and softening, and this is not uncommonly associated with a certain amount of fever. I have seen in cancer of the liver softening of the central portion of the mass, with ulceration and the discharge of the matter into the intestine. This was attended with hectic fever. I mention this so that you will not lay too much stress upon the presence of fever as being against the diagnosis of malignant disease of the liver.

Then there are cases in which pain is not so conspicuous, but where it is the enlargement of the liver, which gives rise to the difficulty in diagnosis. This is perhaps oftener the case in hypertrophic cirrhosis than in any other condition. Syphilitic liver has usually a clear history of specific disease, the organ is very much enlarged, jaundice is uncommon and the kidneys are also involved, and in addition there is enlargement. This is still more apt to be the case in amyloid disease. There we have a history of suppuration, and there is apt to be albuminuria and hyaline casts, showing that the kidneys are affected. Jaundice is not usual. In hypertrophic cirrhosis the liver may be very large, usually symmetrically enlarged, its surface finely granulated, not nodulated. Pain is not a marked symptom, jaundice is very common. Dropsy is not unusual in the early stages of the case. You will meet with cases of this kind which will give rise to a good deal of difficulty in the diagnosis. I am now attending in consultation a case in which this difficulty is present. The man is 45 years of age, a generous liver, who has drank rather more than was good for him, who, without pain and without any appreciable cause, began to have jaundice. This became intense and continued for months without a particle of fever. There is no pain nor tenderness in the hepatic region. The liver is symmetrically enlarged and extends fully four inches below the margin of the ribs. Its surface is indurated and faintly granular. No lumps or nodules can be detected. There is no suspicion of abscess. The diagnosis lies between cirrhosis and infiltrating cancer. In many of these cases it is necessary to suspend judgment until the effect of treatment is tested. Eventually the case will be cleared up, but in the meantime you give the patient the benefit of the doubt, and treat him for hypertrophic cirrhosis. These are some of the diseases which give rise to difficulty in diagnosis in cancer of the liver. In some cases the diagnosis is one of the easiest and simplest, while in other cases it is one of the most difficult.

I need not say to you that when the diagnosis is made the prognosis follows inevitably and the treatment is purely palliative. The indications are manifest. Pain is to be relieved by internal remedies and anodyne applications externally. Remedies to assist digestion are required and everything done to keep up the nutrition of the patient.

SELECTED PAPERS.

THE DOCTOR AS PORTRAYED IN FICTION.

By Ross R. Bunting, M.D.

Annual Address, Polyclinic Medical Society.

In seeking a subject for the first annual address before the Polyclinic Medical Society, I have concluded to select one which is on the border line between medicine and literature, and which is of interest both to physician and layman.

Until the beginning of the present century it is well known that the social status of the physician in Europe was an inferior one, in fact, little better than that of an upper servant. In fiction or the drama he would probably play a very unimportant part, or if noticed at all would be caricatured. It must be acknowledged that the style of dress, manners and language of the doctor of the olden time were rather incitants of ridicule, especially when portrayed in the drama. But we of the present day have discarded the sombre suit of black, the gold-headed cane, the solemn manner and the peculiar form of speech which belonged to our predecessors. The witty Voltaire, in giving expression to the opinions of many educated people of his day, says: "The physician is one who pours drugs of which he knows little into a body of which he knows less." So wise a writer as the author of Lacon writes of our profession: "No men despise physic so much as physicians, because no men so thoroughly understand how little it can perform. They have been tinkering the human constitution four thousand years in order to cure as many diseases." These quotations from two eminent writers would explain, to a certain extent, the inferior part represented by our profession in fiction, as they would naturally be an index of the prevailing sentiment of the literary world at that time. Until the last three decades the favorite heroes of the novel have been kings and queens, lords and ladies, warriors, statesmen, clergymen, and, as democratic ideas increased in Europe, many of the lower orders have been depicted as heroes. In our review of the principal novels portraying the physician as a somewhat prominent character, it will be seen that the advent in the novel of the doctor as a hero is of very recent date.

Gil Blas de Santillane, by Le Sage, is one of the earliest novels in which the profession receives especial notice. Dr. Sangrado is as well known to the majority of readers as the most familiar historical character. The following amusing description of a prescription of this celebrated personage may well bear quoting. "A licentiate had been ordered a bleeding amounting to sixteen poringers in quantity. Then said our doctor to the bleeder: 'Mr. Martin Onez, return in three hours and take as much more, and repeat the same evacuation to-morrow. It is a gross error to think that blood is necessary for the preservation of life; a patient cannot be bleeded too much, for as he is obliged to perform no considerable motion or exercise, but just only to breathe, he has no more occasion for blood than a man who is asleep; life in both consisting of the pulse and respiration only.'" Strange as it may appear, it is but recently that excessive bleeding has gone out of fashion. It lingered long in sunny Spain, the home of Sangrado, also in Italy, where it is well known that the life of the great Italian statesman, Count Cavour, was shortened by the bleedings prescribed for him by his medical advisers. Bouilland but a few years since practiced his well-known coup sur coup bleedings (saignées coup sur coup). I have seen him bleed a patient with typhoid fever eight times during a period of four weeks, the patient, in this instance, making a good recovery. And yet to Bouilland medical science is greatly indebted, for to him we owe our knowledge of the connection between articular rheumatism and certain forms of cardiac disease, also the location of the centre of speech in the anterior lobes of the brain.

The plays of Molière which are of interest to the medical profession are: "Le Malade Imaginaire," "L'Amour Medecin" and "Monsieur de Pourceaugnac." A recent author has said of this great dramatist, ' A writer who did not fear to incense dukes and marquises; who braved the wrath of the theological world by his 'Tartuffe;' who incurred the anger of the women by 'Les Précieuses Ridicules,' 'Le'Ecole des Femmes' and 'Les Femmes Savantes,' was not the man to pause in the pursuit of medical men when they offered him fair game. Absurdities certainly were not wanting in the profession. Dogmatism in medical science was rampant. The scholastic glosses upon Hippocrates and Galen had accumulated into a vast mass of abstractions, which still held sway among the faculty. The four elements—earth, air, fire and water; the dry, the damp, the hot and the cold; the four *humours*, the nine temperaments, were manipulated in syllogysms with a vain, profitless subtlety that resulted in mere word puzzles, more like a complicated algebraical problem than a serious inquiry into matters of life and death. As sincere in his hatred of dead formulas, shams, pedantry and all that belongs to the Tartuffes of sciences as any man in our own day, Molière contributed in no inconsiderable degree to the demolition of these *idola* which stood in the way of the new philosophy." In "L'Amour Medicin" there is a very amusing scene, representing a consultation of four doctors, which ends in a dispute between two of them. A fifth physician, by name Félécin, remonstrates with them in the following language, which would apply to the quack as well in the nineteenth as in the eighteenth centuries. "For centuries," he says, "the world has been infatuated about us. Let us not disabuse the public mind. We are not the only ones who live by the weakness of mankind. There are flatterers, alchemists and astrologers, who profit by the vanity and ambition of credulous minds. But the greatest weakness men have is their love of life, and that is the source of our gains." "The Life and Opinions of Tristam Shandy," by Lawrence Sterne, is a book which, though little read now-a-days, will always hold its place in English literature as a classic. In it there is represented a doctor called Doctor Slop, who is a type of the village doctor of the period.

"Imagine to yourself a little squat, uncourtly figure of a Doctor Slop, of about four feet and a half perpendicular height, with a breadth of back and a sesquipedality of belly which might have done honor to a sergeant in the horse guards. Imagine such a one; for such, I say, were the outlines of Dr. Slop's figure coming slowly along, foot by foot, waddling through the dirt upon the *vertebræ* of a little diminutive pony, of a pretty color—but of strength—alack! scarce able to have made an amble of it, under such a fardel, had the roads been in an ambling condition." Such is the description of the medical man on his way to pay an evening visit. The case was one which concerned particularly the hero Tristram Shandy, for on that night he was born. But when the doctor arrives at his destination, he finds he has forgotten what is the usual accompaniment of the obstetrician. We will quote what our author says: "Great son of Pilumnus, what canst thou do? Thou hast come forth unarmed: thou hast left thy tire-tête—thy new invented forceps—thy crotchet—and all thy instruments of salvation and deliverance behind thee. By heaven! at this moment they are hanging up in a green baize bag, betwixt thy two pistols, at the bed's head! Ring!—call!—send Obadiah back upon the coach-horse to bring them with all speed." The forceps arrive, and are used in due season, with the unfortunate result of injuring poor little Tristam's nose, to which accident our hero attributes many of his misfortunes in after life. The conversation between the Doctor and Tristram's relatives on the use of the forceps in labor, and the bad results it might have upon the child, reminds us of a very recent discussion upon the same subject before one of our medical societies.

Scott, in his "Surgeon's Daughter," has described a doctor in whom our profession may well feel a just pride. "Gideon Gray, surgeon in the village of Middlemas, situated in one of the midland counties of Scotland, led the rough, active and ill-rewarded life of a country doctor. His reputation was such in the medical world that he had been more than once, as opportunities occurred, advised to exchange Middlemas and its meagre circle of practice for some of the larger towns in Scotland, or for Edinburgh itself. This advice he had always declined. He had few wants, and these were amply supplied by a professional income which generally approached two hundred pounds a year, for which, upon an average, he travelled five thousand miles on horseback in the course of the twelve months." This is a true picture of more than one country doctor in Scotland at that time. Many of them were very learned men. As an instance, we could name Dr. Adams, the translator of Paulus Ægineta and Hippocrates. Dr. John Brown relates a visit he paid Dr. Adams early one morning, when he found him at breakfast, "amusing himself in pencilling down a translation of an ode of Horace into Greek verse." Such erudition displayed in our day by a physician with one-half the professional work this village doctor accomplished would excite our admiration.

La Fontaine appears to have had as little faith in our profession as Molière. In his justly celebrated fables he describes a consultation of doctors:

THE DOCTORS.

One morning, Doctor Much-the-Worse went out
  To see a patient, who was also tended
By Doctor Much-the-Better. "Past a doubt,"

The former said, "this case is nearly ended;
There's not a chance." The latter trusted still
In physic's aid; but while the twin concocters
Disputed hard on plaster, draught on pill,
The patient died from this attack of doctors.
"Look there," said one, "I told you how 'twould be;"
The other said: "No doubt you're vastly clever;
But if our friend had followed *me*,
I know he would have been as well as ever."

"The Spy," by J. Fennimore Cooper, introduces a character, Dr. Spitgreaves, surgeon in the American army during the Revolution, whose quaint sayings add a great deal to the charm of the book, one of the best, we think, of this author's works.

Dr. Griffin, in the "Mysteries of Paris," by Eugene Sue, is represented as a very skillful physician. Unfortunately, he is a very unimportant character. It is surprising our author does not make the doctor play a more important part, as he himself was a physician, serving in the French army and navy, and was present at the battle of Navarino, in 1828.

"Doctor Antonio," by Ruffini, is a beautiful love story, introducing a doctor who appears to be more of a politician (using the term in the European sense), an Italian liberal, than a doctor, although his management of the case he was called to treat was eminently satisfactory. Here is a description of the hero doctor: "He was not handsome, at least not handsome as heroes of novels generally are. He had a large mouth, a nose of a cut neither Greek nor Roman, rather high cheek-bones; in short, a cast of features altogether irregular and somewhat leonine—all that could be said in its favor being that it was highly expressive and intellectual. There was power of will and thought in his round, prominent temples, which he could contract wonderfully at times. The appearance of the man, on the whole, was remarkable, with more in it, perhaps, of what commands respect than attracts sympathy."

Dr. Thorne, by Anthony Trollope, an important character in the novel of the same name, is represented as a well-educated physician, withal a man with a good heart, who performs a noble act in looking after the bastard child of his worthless brother. He has the misfortune to be a bachelor, which was rather a disadvantage in the commencement of his practice. Says the author: "Ladies think, and I, for one, think ladies are quite right in so thinking, that doctors ought to be married men. All the world feels that a man, when married, acquires some of the attributes of an old woman; he becomes, to a certain extent, a motherly sort of a being; he acquires a conversance with woman's ways and woman's wants, and loses the wilder and offensive sparks of his virility. It must be easier to talk to such a one about Matilda's stomach, and the growing pains in Fanny's legs, than to a young bachelor."

"Doctor Herbeau," by Jules Sandeau, might have been entitled "The Rise and Fall of a Village Doctor," for this is the subject of the novel It is written in the attractive style which characterizes this author's writings. Doctor Herbeau, as described in this work, is a man of fifty years of age, well educated in his profession, thoroughly versed in the classics, his favorite author being Horace. At 3 o'clock in the morning in summer, and 6 o'clock in winter, he was in the saddle on his way to attend his patients. He was the only physician in the village Saint Leonard's; his position was an enviable one, for he was without competition. But, alas! his triumph was not destined to be permanent; a young physician arrives from Paris and settles in the village. Through the dislike conceived toward him by the husband of a lady whom our doctor had attended for several years, the influence of this man was exerted against him and in favor of the new physician. This influence of his enemy is exerted to such an extent that the old doctor gradually loses many of his best patients. The loss of so much of his clientèle has such an effect upon him that in despair he resigns his practice. His son, whom he expected to succeed him, returns from Montpelier, having wasted his time; and, instead of a doctor, has become a débauché—and, still worse for his father, a homœopathist. Says the author of the latter days of Doctor Herbeau: "Living, he assists at his own death. The villagers, whom he had attended for more than a quarter of a century, care not whether he be living or dead. Society, where he had so lately shone as a brilliant conversationalist, no longer remarks his absence. Even if he desired to recommence his practice, he would find only the poor, who loved him and revered his memory." Although this story is somewhat overdrawn, yet, as regards the ingratitude of patients, every practicing physician would agree with the author.

The hero of Dr. Grattan, by Dr. William A. Hammond, is a good character, although somewhat of a remarkable one for a village doctor. Thoroughly educated, well up in his profession, we would think the inhabitants of Plato would feel proud of their medical man. Evidently the author does not think there is no romance in life at middle age, for our hero is as full of it as a youth of twenty.

In Balzac's "Country Doctor," Dr. Benassis, to atone a serious error of his youth, instead of immuring himself in a convent, settles in a village near the Grande Chartreuse, devoting himself not only as a physician, but as a general benefactor to the people. As he himself tersely expresses it: "The *Fuge, late, tace* of the Carthusian is my motto in this place; my work is an active prayer; my moral suicide is the life of my district, over which I love to sow with outstretched hands the seeds of happiness and joy, giving that I have not. Rich people cannot buy my time; it belongs to the inhabitants of this valley. I desire neither fame nor fortune; I ask for no praise and no gratitude from my patients." In speaking to a military friend, the doctor said: "It is horrible to me to think so many people thank me for the little good I do, when that good is the fruit of my remorse. Captain, you alone know the secret of my life. If I had drawn my courage from a purer source than the memory of my errors, I should be a happier man; but then, there would be nothing to tell you about my life." No character in fiction, for true piety, has ever been more faithfully portrayed than that of Benàssis, the country doctor of Balzac.

"The Adventures of Philip," by William M. Thackeray, describes two physicians, Dr. Goodenough and Dr. Formin, the father of Philip; the former one of the best, the latter one of the worst of men.

In the "Doctor of Deane," by Mary Towle Palmer, the hero, a physician, is thus described: "Nature had undoubtedly created him from the beginning for this particular profession, and it is a fortunate state of things for any man to have her unequivocally signify her intentions with regard to him. She had given him a strong physique, combined with a sensitive spirit, and at the same time a passion for scientific exactitude in every department he touched. He had always studied, from his babyhood up, and before he had had time to lift his eyes from his books, as it were, he had found himself face to face with a very busy life; with people in serious trouble looking to him for help; with Death and a stern conscience asking him if Death were inevitable; in fact, face to face with his work." But our hero is not destined to remain in a country village; through his writings he has become known to the medical profession, and is invited to a large city by an elderly physician, a neurologist, to assist him, with the prospect of succeeding to his practice.

For the credit of our honored profession it is to be hoped there are few characters in *real life* like Dr. Wendell, as depicted in "War Time," by Dr. S. W. Mitchell. As the author says of him: "He was without much steady capacity for resistance, and yielded with a not incurious attention to his humors, being either too weak or too indifferent to battle with their influence; and, in fact, having, like many persons of intelligence without vigor of character, a pleasure in the belief that he possessed in a high degree individualities even in the way of what he knew to be morbid. He was naturally a refined and also a very sensitive man, cultivated not deeply, but over much service. It is possible for some men to pursue every object, their duties and their pleasures, with equal energy; nor is it always true that the Jack-of-all trades is master of none; but it was true of this man that however well he did things—and he did many things well—he did none with sufficient intensity of purpose, or with such steadiness of effort as to win high success in any of them. He was always planning some valuable research, but was never energetic enough to overcome the incessant obstacles which make research so difficult. Could he have retired into some quiet college work as a student of physiology or pathology, he would probably have attained a certain amount of reputation, because in such a career irregular activity is less injurious." We have quoted thus largely from this novel in order to show how this well-drawn character of Dortor Wendell differs from the Doctor of Deane, the one the type of a true physician, the other entirely unfitted by nature and charcter for his profession.

"Dr. Vandyke," by John Esten Cooke, is depicted in the story of that name as an old physician, very eccentric, a remarkable medical man for the period, the old colonial days, more than one hundred years ago. The doctor was a very close student, especially well versed in what we now call neurology. He makes use of a liquid to relieve pain, with the aid of which he performs a wonderful operation (for those days) upon the skull, trephining and cutting down upon the brain to relieve a local lesion, thus anticipating the great cerebral surgeons of a hundred years later. In a note the author says in regard to ether: "Though the discovery of the anæsthetic properties of ether three-quarters of a century before the first experiments of Wells and Morton may seem too improbable even for fiction, yet it should be remembered that ether was known to the alchemists, and that the method of making it was described by Valerius Cordus in 1540. It is also to be considered that physicians long sought for some means of benumbing the nerves of sensation during surgical operations, and that in the last century their attention was particularly turned to ether, which Dr. Frobinius first brought into general notice by a paper in the *Philosophical Transactions* of 1730. There is, therefore, really no improbability in supposing that an able and inventive student of chemistry and medicine like Dr. Vandyke may have anticipated in his solitary researches the discovery of Morton, and that the memory of his success may have been lost in the confusion of the Revolution, which was then close at hand."

"Very Hard Cash," by Charles Reade, describes quite a number of doctors. There is an amusing description of a love-sick girl, whose fond mother, in her anxiety about her, consults five or six different physicians, who give as many opinions in regard to the case. An old family physician, Sampson, diagnoses the case correctly, telling her mother she has no disease. Some of the doctors do not figure very creditably, as three or four of them sign certificates incarcerating sane people in asylums.

Dr. Sampson, according to the author, anticipated Richard Bently Todd in his advocacy of the stimulating in place of the depressing treatment of disease. To George Eliot must be awarded the credit of having given the best delineation of a doctor in romance. We refer to Lydgate, the doctor in "Middlemarch." To this man his profession was everything. "He had a youthful belief in his bread-winning work, not to be stifled by that imitation in make-shift called his 'prentice days; and he carried to his studies in London, Edinburgh and Paris the conviction that the medical profession as it might be was the first in the world; presenting the most perfect interchange between science and art; offering the most direct alliance between intellectual conquest and the social good. Lydgate was ambitious above all to contribute toward enlarging the scientific, rational basis of his profession. He felt the need for that fundamental knowledge of structure which, just at the beginning of the century, had been illuminated by the brief and glorious career of Bichat, who died when he was only one and thirty, but, like another Alexander, left a realm large enough for many heirs. He (Lydgate) would be a good Middlemarch doctor, and by that means keep himself in the truth of far-reaching investigation." Our hero, with his high and noble aspirations, was doomed to disappointment. He marries a woman, very beautiful, it is true, but as poor as himself, who proves to be a hindrance rather than a helpmate to him in his profession; for she is selfish, fond of show, unable to bear the want of means which falls to the lot of most young physicians in the beginning of their career. Not being fitted for the life of a village doctor, he is obliged to leave Middlemarch, and settles in London. "He died when he was only fifty, leaving his wife and children provided for by a heavy insurance on his life. He had gained an excellent practice, alternating according to the season between London and a continental watering place, having written a treatise on Gout, a disease which has a good deal of wealth on its side. His skill was relied on by many paying patients, but he always regarded himself as a failure. He had not done what he once meant to do." What a man like this might have done for medical science, if, in the outset of his career, he had not met with so many bitter disappointments.

It is astonishing, the wonderful insight of the scientific life of the physician displayed by this author; for even a physician, supposing he possessed the wonderful ability of George Eliot as a writer, could not better have portrayed the character.

"Elsie Venner; a Romance of Destiny," by Oliver Wendell Holmes, is a very strange and fascinating story, the basis of which is the subject of pre-natal influence. "The real aim of the story," says the author, "was to test the doctrine of 'original sin' and human responsibility for the disordered volition coming under that technical denomination. Was Elsie Venner, possessed by the venom of a crotalus before she was born, personally responsible for the 'volitional' aberrations which, translated into acts, become what is known as sin, and it may be what is punished as crime?" This girl had beautiful black eyes, which had a strange fascination, but yet created a feeling of terror in the persons thus fascinated. Of a very graceful figure, which her companions said 'she could twist into all sorts of shapes, or tie herself into a knot, if she wannted to.' Not one of them would look her in the eyes. 'In fact, all her actions resembled those of the ophidian which had cast such a blight upon her young life.' She read a passage from Keat's "Lamia" one day in the school-room, which had such an effect upon the rest of the girls that they nearly fainted.' She was uncontrollable at home, and would pass whole days in the woods. She dies young, and during her last days 'the likeness she bore to her mother came forth more and more as the cold glitter died out of her diamond eyes, and the stormy scowl disappeared from the dark brows and low forehead.' "

There are two characters in this book which entitle it to a place in our list of novels—an old physician and a medical student teaching in a female seminary (in which Elsie Venner is a pupil), and who is supposed to furnish the principal incidents upon which this story is founded. The former was sixty-three years of age, and a shrewd, old-fashioned practitioner. The old doctor admits he has not many printed books, "and what I have I don't read quite as often as I might, I'm afraid. I read and studied in the time of it when I was in the midst of the young men who were all at work with their books. When a man that's once started right lives among sick folks for five and thirty years, as I've done, if he hasn't got a library of five and thirty volumes bound up in his head at the end of that time, he'd better stop driving round and sell his horse and sulky." Evidently our author does not admire the life of a country doctor. "Oh, yes! country doctor; half a dollar a visit—drive, drive, drive all day—get up at night and harness your own horse; drive again ten miles through a snow-storm, shake powders out of two vials—come back again, if you don't happen to get stuck in a drift—no home, no peace, no continuous meals, no unbroken sleep, no Sunday, no holiday, no social intercourse, but one eternal jog, jog, jog, in a sulky, until you feel like the mummy of an Indian who had been buried in the sitting posture and was dug up a hundred years after." There is a very interesting conversation in this book between the old doctor and a clergyman. Says the latter: "Ubi tres medici duo athei, you know, doctor. Your profession has always had the credit of being lax in doctrine, though pretty stringent in practice." To which the former replies: "I've come to the conclusion that nobody believes in God and trusts in God quite so much as in the doctor; only it is'nt just the sort of Deity that some of your profession have wanted them to take up with. There was a student of mine wrote a dissertation on the Natural Theology of Health and Disease, and took that old lying proverb for his motto. He said the old heathen Doctor Galen praised God for His handiwork in the human body, just as if he had been a Christian or the Psalmist himself. He said they had this sentence set up in large letters in the great lecture room in Paris: 'I dressed his wound, and God healed him' (Je le pansai, Dieu leguarit). That was an old surgeon's saying, and he gave a long list of doctors who were not only Christians, but famous ones. God opens one book to physicians that a good many of you don't know much about—the Book of Life. That is none of your dusty folios, with black letters between pasteboard and leather, but it is printed in bright red type, and the binding of it is warm and tender to every touch. They reverence that book as one of the Almighty's infallible revelations. They will insist on reading you lessons out of it, whether you call them names or not. These will always be lessons of charity."

"The Magic Skin" (La Peau de Chagrin), by Balzac, shows how "the abuse of will and thought brings its natural penalty. The man who devotes himself to the attainment of material ends is liable to find, when the goal is reached, that he is no longer capable of enjoying the prize." Raphael, by accepting "the Magic Skin," and with it the contract inscribed thereupon, will have every wish gratified. But every desire satisfied makes the Magic Skin contract and shortens his own life. "Desire means death to him, and to avoid it he must vegetate, live by line and plummet; ward off all exciting causes, and above all shun everything that may induce him to wish anything. What Raphael suffers from the contraction of the Magic Skin is precisely what living men suffer who have abused their will power in pursuing success in material things. Raphael is a type of modern civilization, of the eager self-seeker, the selfish fortune-hunter and money-grabber, who estimates everything in accordance with its real or fancied usefulness to himself."

The physicians in this book are treated in the same satirical manner as the other scientific men. A consultation of four doctors is held in Raphael's case to try to solve the problem of his peculiar disease

Each has a theory of his own in regard to the malady, "and cares nothing for the patient and little for the higher aims of their own profession. Doubtless each would be glad to chronicle a cure, if it redounded to the credit of his special theory; but neither is generous enough to be gratified by a success which traverses his own views."

"Dr. Breen's "Practice," by W. D. Howells, represents the heroine, a young lady, good-looking and attractive, who, having had a love disappointment when very young, turns her attention to the study of medicine and becomes a doctor, to soothe her wounded and love-sick heart, just as some of her sex under similar circumstances enter a convent or do some other desperate act. The young doctor has evidently mistaken her vocation, for she finally marries and settles down, but not as a practicing physician, as she had intended. There is a good character, a Doctor Mulbridge, who is well depicted in this book. We give a description of him at the bedside of a female patient. "The large, somewhat uncouth man gave evidence to her intelligence that he was all physician, and that he had not chosen his profession from any theory or motive, however good, but had been as much chosen by it as if he had been a born physician. He was incredibly gentle and soft in all his movements, and perfectly kind, without being at any moment unprofitably sympathetic. He knew when to listen and when not to listen; to learn everything from the quivering bundle of nerves before him without seeming to have learnt anything alarming; he smiled when it would do her good to be laughed at, and treated her with such grave respect that she could not feel herself trifled with, nor remember afterward any point of neglect." This novel is not calculated to advance the cause of woman as a practitioner of medicine; according to our view, it will rather be quoted as an argument against her appearing in any other rôle than that of a married woman. In Dr. Zay Miss Phillips has painted in the person of her heroine a very strong character. The young doctor practiced in a country village, with work sufficient to tire out a robust man, for according to one of her patients, "she worked enough one winter to kill five men and ten ministers." There are some noble passages in the book, as this one on the position of the medical profession. "It is unmatched, I believe. Even the clergy have a poor one beside us. We stand at an eternal confessional, in which the chances of moral escape or evasion are reduced to a minimum. It is holding human hearts to count their beats. When you add the contest of life and death, you have a position unique in human relations." Some of the advantages of both husband and wife being physicians are thus amusingly described by a lady friend of Dr. Zay. "When you consider the convenience of taking each other's overflow practice, and consulting together when folks die, and sitting down of an evening to talk over operations, and when you think of having a woman-like doctor to turn to, sharin' the biggest cares and joys a man has got, not leanin' like a water-soaked log against him when he feels slim as a pussy-willow himself poor fellow, but claspin' hands as steady as a statue to help him." But the doctor "melts into the woman at last," when our heroine agrees to change her name, although protesting she will not give up her profession.

In "A Country Doctor," by Sarah Orne Jewett, the two prominent characters depicted are Doctor Leslie, the country doctor, and his ward, whose life is described from childhood to womanhood.

"The Doctor was a scholar and a thinker in other than medical philosophies, and most persons who knew anything of him thought it a pity that he should be burying himself alive, as they were pleased to term his devotion to his provincial life."

There is a good deal of common-sense in the following remarks made by the Doctor to a professional friend: "The active men who are really to be depended upon as practitioners are kept so busy that they are too tired to use the separate gift for writing, even if they possess it, which many do not. And the literary doctors, the medical scholars, are a different class, who have not had the experience which alone can make their advice reliable. But we have to work our way and depend upon ourselves, we, country doctors, to whom a consultation is more or less a downfall of pride." Our doctor, by careful observation and study of his ward's character from her early youth, had arrived at the conclusion, which became, as time rolled on, more and more of a fixed purpose with him, that she was better adapted for a physician than for any other situation in life. In a conversation between the heroine and one of her female friends the arguments for and against women doctors are very well brought out. She says in favor of the study of medicine by women:

"I believe that God has given me a fitness for it, and that I could never do anything else half so well. I do not wish to be married, and do not think it right that I should be. If I have good reasons against that, would you have me bury the talent God has given me, and choke down the prayer every morning that I may do this work lovingly and well? I will not attempt to say that the study of medicine is a proper vocation for women, only that I believe more and more every year that it is the proper study for me. It certainly cannot be the proper vocation for all women to bring up children, so many of them are dead failures at it; and I don't see why all girls should be thought failures who do not marry. I don't believe that half those who do marry have any real right to it, at least until people use common-sense as much in that most important decision as in lesser ones. The preservation of the race is no longer the only important question; the welfare of the individual will be considered more and more. The simple fact that there is a majority of women in any centre of civilization means that some are set apart by nature for other uses and conditions than marriage.

"In ancient times men depended entirely upon the women of their households to prepare their food and clothing, and almost every man in ordinary circumstances of life was forced to marry for this reason; but already there is a great change. The greater proportion of men and women everywhere will still instinctively and gladly accept the high duties and helps of married life; but as society becomes more intelligent it will recognize the fitness of some persons and the unfitness of others, making it impossible for these to accept such responsibilities and obligations, and so dignify and elevate home life instead of degrading it." Although it may appear needless repetition, and, like the "still harping on my daughter" of old Polonius, we cannot refrain from reproducing this tribute to the "physician. Nobody sees people as they are, and finds the chance to help poor humanity as a doctor does. The decorations and deceptions of character must fall away before the great realities of pain and death. The secret of many hearts and homes must be told to this confessor, and sadder ailments than the text-books name are brought to be healed by the beloved physicians. Teachers of truth and givers of the laws of life, priests and ministers, all these professions joined in one with the gift of healing, and are each part of the charge that a good doctor holds in his keeping."

Dr. Rhoda Gale, in "The Woman Hater," by Charles Reade, was born in England, but educated in Massachusetts, obtaining her degree in France. She was undoubtedly a very bright woman, and as the sequel proves, was well adapted to the practice of medicine, for by her force of character and energy she succeeds in acquiring a practice, thus overcoming the prejudices of her English neighbors, whose opinions are more difficult to change than those of any other nation. The author describes the treatment to which women doctors were subjected in England and Scotland, resembling the ordeal which they have undergone in free America. The following suggestions are offered in this book as to what should be done by the British Government in regard to women practitioners: "What the British legislator, if for once he would rise to be a lawgiver, should do, and that quickly, is to throw open the medical schools to all persons for matriculation. To open all hospitals and infirmaries to matriculated students, without respect of sex, as they are already open by shameless partiality and transparent greed to unmatriculated women, provided they confine their ambition to the most repulsive and unfeminine part of medicine, the nursing of both sexes and laying out of corpses. I say that to open the study and practice of medicine to women folk under the infallible safeguard of a stiff public examination, will be to rise in respect to human rights to the level of European nations who do not brag about just freedom half as loud as we do.

"It will also import into medical science a new and less theoretical, but cautious, teachable, observant kind of intellect; it will give the larger half of the nation an honorable ambition and an honorable pursuit toward which their hearts and instincts are bent by nature herself; it will tend to elevate this whole sex, and its young children, male as well as female, and so will advance the civilization of the world, which in ages past, in our own day and in all time, hath, doth and will keep step exactly with the progress of women toward mental equality with men."

From our view of the works of fiction in which the doctor is represented, we have shown that the latter is rarely, if ever, awarded the position he should occupy as a man of science. It is not to be expected that this position would be properly defined by lay writers, for the public, as a rule, are very poor judges of the capabilities of physicians. The medical man who has showy manners, an easy flow of language, in other words, the *savoir faire,* added to these an assumption of prosperity, will nearly always succeed in the struggle for practice, when his more modest and unassuming competitor would probably fail, although the latter may be, and often is, the more learned and skillful of the two. But considered as a man and a citizen, in how few instances is the self-sacrificing spirit of the physician ever mentioned, even in the journals of the day, much less in romance. And yet the examples of medical heroism as shown in the plague of Marseilles in 1720, the famine fever in Ireland in 1847, the yellow fever in this country in 1793, and recently in Norfolk and Portsmouth, would furnish materials enough for scores of romances equalling in interest those by the immortal "Wizard of the North," whose heroes are kings and warriors.

As we have the historical novel by Scott, the novel with a purpose by Dickens, Charles Reade and others, the religious novel, introducing the clergyman as a hero, in Robert Ellsmere, and John Waid Preacher, may we not have at some future day many of what have been styled by a well-known writer "medicated novels," in which numerous facts in pathology and physiology will be treated in an attractive manner, and as a necessary adjunct to the story introducing the doctor as a prominent character.—*The Polyclynic.*

NOTES ON THE VALUE OF SOME NEW DRUGS.

By James F. Goodhart, M.D., F.R.C.P., Physician to, and Lecturer on Pathology at, Guy's Hospital. Read before the North London District Meeting of the Metropolitan Counties Branch at Tottenham.

The drugs that I purpose to say a word or two about to-night are paraldehyde, urethan, antipyrin and pilocarpin; and perhaps, in dealing with antipyrin, I may say a word or two upon my experience with other antipyretic drugs. In these go-ahead days I may be taken to task for calling these new drugs, and I had some doubt how to name my paper; but if I cannot call them new I most certainly cannot call them old, and no equivalent to the "subacute' of medicine came ready to my hand. Let me also say that I do not propose to treat of these drugs from any other than my own standpoint; it is simply my object to say in what I have found them useful, and ask you for such experience as you may have of the same agents in similar or other fields. Thus I shall hardly, if at all, discuss the actions of the remedies, nor is it my object to give even a summary of the diseases in which they have been used or recommended.

Now, first of all, *paraldehyde.* It has been *out,* so to speeak, for several years, but I do not think it is at all in common use. I am rather fond of it, and have given it frequently now certainly for three or four years, and that means in a large number of cases. Originally recommended, I believe, as a hypnotic, one that combined the advantages, to the exclusion of the disadvantages, of chloral and bromide of potassium, I tried it first of all in cases of insomnia. I do not consider it at all a reliable drug for that state of things; but it is a drug of unquestionable value in the restlessness and cardiac asthma so often seen in aortic disease, and in the laboring dilated heart of chronic Bright's disease. I well remember the first case in which I gave it some years ago, a man who had long been subject to gout, and who had a granular kidney and a large dilated heart. His distress was extreme, and I had exhausted all the old-fashioned remedies (than which few new are better), and many new, including caffeine, and with a marked condition of Cheyne-Stoke's breathing, he had all the aspect of speedy dissolution. As a last resource I gave him half-drachm doses of paraldehyde, with marked relief to the end of the case, which occurred about a fortnight later. I have also found it occasionally useful in the headache of renal disease. In two cases, where this was especially troublesome in the early morning, it was taken on and off for many months, with great relief. As a general rule, nitro glycerine is the more reliable remedy for the headache of Bright's disease, but the symptom is often a troublesome one, and paraldehyde may well be kept in memory for accasional cases. But there is another class of cases in which I think it of even more use. It was recommended some years ago, I think, by Dr. Strachan, for certain cases of mania, and some three years or so ago I had to deal with a very troublesome case of alcoholic delirium. The patient was a very free drinker, had had delirium tremens twice before, and was now in a low, muttering, sleepless condition, which nothing seemed to quiet or control. He had been in a semi-comatose state already for five days. He was quite unheedful of any one about him, talked in an unintelligible mutter, and his muscles were tremulous, flabby and wasted. As his wife was his equal, if not his better half, in drinking capacity, he was sent into Guy's Hospital, and for eighteen days he remained in much the same state. During that time his treatment consisted of free aperients, iodide and bromide of potassium, opium, and latterly of subcutaneous injections, first of 1-100 grain, and then of 1-60 grain of hyoscyamine; none of them seemed to do him any good. I then tried half a drachm of paraldehyde three times a day, and within a day or two he was much clearer in his mental condition, and before a week was out he was practically well. He remained somewhat feeble-minded for some little time, but he quite recovered eventually. Since then I have given it in similar cases several times. Whether it acts as a stimulant or a sedative I do not know, but it certainly sometimes quiets the delirium and clears the mental faculties. My friend Mr. Wornum lately ordered it in another such case, but it was only given in ten-minim doses. The general condition improved decidedly, but the mental condition still remains cloudy. However, the patient has come out of a semi-comatose state, and is now sitting up, although she still suffers from delusions.

Another case of what I think may be called a similar ailment was treated in a similar manner. A young fellow, aged 27, had typhoid fever badly; he became excessively emaciated, and not long after the fever left him he went off his head; he was very delirious and troublesome. Free stimulation failed to restore him, and he was, therefore, ordered half-drachm doses of paraldehyde. This was on the eighth of the month. The stuff was so nasty, he said, that he would take no more, and when I again saw him, on the 11th, it had not been persevered with. He then began it regularly, and within four or five days he was much clearer and less delirious, and at the end of a week he was practically well.

I suppose that the state of malnutrition after a prolonged attack of typhoid fever is not very unlike that produced by alcoholic poisoning, and, if so, might be expected to be benefited by the same remedy. The main objection to paraldehyde is its strong taste. I have usually given it with almond mixture, but it is, after all, not so very nauseous combined with some tincture of orange and syrup and water. The patient taking paraldehyde emits a very peculiar and characteristic odor, which is very tenacious, and I have known it to linger about the person two or three days after the drug has been discontinued.

Of *urethan* I have not much to say, but that little is in its favor.

I have used it in a large number of cases as a hypnotic, and although it often fails, I think it is one of the best remedies of the kind since the introduction of chloral. I give it in fifteen grain doses of water, and have often found it useful; and once I remember it was very much so in relieving the headache of early typhoid. A newer hypnotic still is sulphonal, but my experience of this as yet only extends to one case.

Of *pilocarpin* I have only two points that I wish to make. I have, of course, used it quite commonly in Bright's disease, and still do as a usual thing, and it seldom fails to induce a copious diaphoresis; but one day it occurred to me to order a third of a grain as a subcutaneous injection in a case of chronic jaundice with intense itching. It occurred to me that a drug which so uniformly was productive of speedy diaphoresis must profoundly modify the functions of the skin for the time being, and might in doing so relieve the itching which has hitherto, in my experience, defied treatment. It did so quite beyond my expectation, and kept the patient comfortable until she died. In the next case it was equally successful. The patient had one-third of a grain injected subcutaneously many times, and always with this result, that the first twenty-four hours he was quite free, the second he was fairly free, and the third day he was getting bad again, and the dose had to be repeated. I next tried it on an old lady who suffers from very frequent attacks of gall-stones. She is equally decided as to the relief she obtains, but her pleasure is to some extent marred by her skin being for the time converted, as she describes it, into the similitude of that of a laundrywoman. I have had six cases in all, and in none has it failed; and when we consider that really there is nothing that can be relied upon to relieve this most distressing feature of jaundice, I hope the suggestion may prove of service. The other class of cases in which it seems to me to be occasionally of value is where the lightning pains of locomotor ataxy are severe. I have two or three times found it useful in these cases when many other means had been tried and failed.

Of *antipyrin* I am almost afraid to speak, for just now it is such a fashionable drug that it would well-nigh be easier to say for what diseases it had *not* been recommended than to enumerate those for which it had. But it does seem that it is likely to achieve a permanent name for abnormal nerve discharges of various kinds, and chiefly those that have been, I think happily, designated as the "paroxysmal neuroses." For instance, there can, I think, be no doubt that it is a very valuable means of combating some migrainous headaches. From what others have told me, and from what I have occasionally seen myself, it would appear to be a remedy of value in some cases of dysmenorrhœa—cases which might, I think, not unfairly be designated as pelvic catamenial neuralgia, if the gynæcologists will forgive me for venturing to have an idea outside my own lines. And fever, too, though you may not, perhaps, have looked at it in that light, is surely much of it a paroxysmal neurosis; and as that light is, I think, a leading one, let me follow it for a moment. Pyrexia is the medical Aunt Sally just now. Up goes a temperature of 103°, and down goes a dose of antipyrin or one of its congeners; and no doubt in most cases the shot tells and down goes the temperature, but it speedily goes up again, and, like the old lady I have mentioned, is soon ready for the next shot. And what I have learnt from the study of pyrexia is this, that it is much more special to the individual than it is to the disease. I am shown a chart of a doubtful case, and asked if it was not like typhoid. But what is a typical typhoid chart? There is little else typical than its duration; and the proper duration of typhoid, as every one knows, is as often honored by the breach as by the observance; and taken, as temperature charts are usually now-a-days, every three or four hours, or oftener, there are few charts typical of anything. And I maintain that, given a certain uniformity in length of certain fevers, according to the life-history of particular organisms, the rest of the pattern is due to the individual resistance or want of it on the part of the tissues and centres provoked. Well, then, who does not know that fever (the tendency to pyrexia) runs in families? Only yesterday I heard a mother say so. All her children are noted by their doctor as becoming sharply pyrexial in all the minor ailments and disturbances of daily life. We can all endorse the truth of that observation. Fever runs in families, then, which is only another way of saying that it is the individual you must take stock of in treating the malady; and I take it that that is in some sort evidence of the predominant influence of the nervous system in the regulation of the production and the discharge of heat, and I would certainly hold that pyrexia is in many cases a neurosis. It is from this point of view that there seems, I think, the strong probability that drugs will come to be of value in checking fevers by acting upon and restoring the tone of the diseased nervous centres.

I throw this out for discussion. According to my own experience, I doubt whether we have got far yet in this direction. We require to know much more than we as yet know about the particular fault in each case that needs a remedy. By-and-by, no doubt, we shall be able to tell these and apply now one antipyretic, now another, according to the special need; but it is hardly so as yet. My own experience would lead me to say that there are two kinds of fever: one that does harm to the patient, the other associated with no ill result. In the latter, little good results from the administration of antipyretics; and in the other class my own impression is that little good results either; in both the temperature is depressed for a time by the remedy, but it soon rises again, and the duration of the disease is not appreciably influenced thereby.

Antipyretics have been advocated by some in enthusiastic terms for the sudden and sharp febrile states that are met with in childhood, and I am far from saying that in such they may not be of use. I believe they may be of great use in that special condition known as hyperpyrexia—or rather in the states which threaten it—because in it the rise is very sudden, the attack is of the nature of a sudden stormblast, and the tissues may be irreparably withered by it. In the same way in children sudden fever may do irreparable damage to their succulent tissues, and a dose of antifebrin or antipyrin may avert this. Nevertheless, it will occur to all of us that the attacks in which they seem to be so beneficial are just those whose nature is to subside as suddenly as they come, and I do not think that the evidence they afford is as yet conclusive in favor of these remedies.

But to go back to antipyrin in its power to depress abnormally high temperatures and to dissipate a migraine or pelvic neuralgia, we have evidence of some powerful influence on the nervous centres, and it is not far thence to the question, Might it be useful in other neurotic states? And it has been tried of late in two very troublesome ailments, namely, chorea and whooping-cough. I have no personal experience to relate as regards the latter, but it has been spoken of very favorably by Sonnenberger, Wendt and Genser. Sonnenberger has tried it in about seventy cases, the dose varying from one-seventh of a grain in very young children to 15 grains in adults three times a day. Wendt followed the former writer's suggestions, and states that the drug served him better than any other; he claims no cures, but it favors an easy course to final recovery, a mitigation of the paroxysms and a reduction in their number, and certainly a freedom from complications. Genser also asserts that antipyrin always diminishes the number of the coughs in the twenty-four hours, and controls the intensity; the duration of the disease seldom extended over twenty-four days—a very good record, as all will allow, if it be borne out by other observers. The mean dose was a grain and a half a day for each year of age; but I should say myself that the drug might be pushed to the extent of 1½ grain per year three or four times in the twenty-four hours, if necessary.

As regards chorea, I can speak—to some extent and tentatively—favorably. I have given it in the last five cases that have come under my observation. In four the result may, I think, be considered to have been good. Thus a girl, aged 8, was admitted for her fourth attack of chorea. It was general and rather severe, and she had mitral disease (probably contraction) also. She was put upon 2-grain doses of antipyrin three times a day, and after five days it was noticed that there was a marked improvement in the choreic condition, the face muscles especially being quieter. The dose of the drug was then increased to 4 grains three times a day. She continued to improve for ten days, and by that time the movements had lost all their violence, when the drug was discontinued for arsenic. The minor movements remained for sometime, as is usually the case with any treatment. She left the hospital practically well after seven weeks.

In another case a boy of 12, who had had rheumatic fever twice and chorea on and off for a long time, was admitted to Guy's Hospital with marked but not violent chorea of face and extremities and aortic regurgitation. He was put upon 5-grain doses of the drug three times a day on the 24th of the month; on the 29th the movements were noticed to be less marked, and on the 31st they were not noticeable, and he remained well afterwards. He took the drug for twelve days altogether, and it was then discontinued because of an erythematous eruption that appeared. He was in the hospital three weeks.

A third case, a girl of 8, under the care of Dr. Cooper, of Rotherhithe—a very bad case indeed, associated with much wasting, imbecility, paralysis and pericarditis—was given also 5 grains three times a day. She took it for eight days, and was by that time so much improved that it was discontinued for iron and digitalis. The improvement began within forty-eight hours after the commencement of the antipyrin.

A fourth case, now in the Evelina Hospital, a girl of 9½, came in on November 26th with general rather violent chorea. I gave her 5-grain doses every six hours, and on the 29th increased it to 10 grains every six hours. On December 3d she was lying in bed hardly choreic. In this case, however, although the chorea was manifestly better, she suffered from antipyrin poisoning. After three or four days a copious measly rash appeared, with high fever and albuminous urine, and then it was necessary to stop the drug.

The other case, under the care of Dr. Steele Perkins, of Streatham, was made worse by the treatment, and it was given up after ten days. I shall not indulge in any exuberant anticipations, but, remembering how very troublesome chorea is, I think there is enough evidence at hand to make us believe that, at any rate in some cases, antipyrin may prove of service. Legroux and Dupré have given it in twenty cases in doses of about 7 grs. five or six times a day, and they conclude that it is one of the most certain and harmless remedies for chorea, the improvement usually commencing in four to six days.

Before closing, perhaps I may be allowed to add a word not upon a new remedy, but upon an uncommon method of administration of an old one. I refer to the subcutaneous injection of *strychnine*. There is, of course, nothing novel in this. Nevertheless, I am under the impression that strychnine is not often administered in this fashion. Dr. Habershon has advocated its use thus in cases of cardiac failure, and during the past year I have had three troublesome cases of more or less general paralysis, that have, for such cases, rapidly improved by its means. One was a case of peripheral neuritis due to alcohol and lead-poisoning combined. He was in a very tremulous condition when admitted. Many of his muscles were much wasted. He had a good deal of pain in the course of various nerves, and he was both sleepless and demented. Various drugs were administered, and he was assiduously galvanized, but he became decidedly more powerless. By-the-bye, he had a subcutaneous injection of hydriodate of hyoscine, first 1-200 of a grain, and then 1-100, and this certainly seemed to quiet his nocturnal delirium and procure him sleep. On November 4th I ordered him 1-60 grain of strychnine to be injected hypodermically twice daily. On the 14th it was increased to 1-50, and by the 31st he was taking 1-34 twice daily. By this time it was noted that the movements of the patient's hands and arms were much more lively, and there was a gain in the grasping power of both hands. From this time he made continuous improvement. The injection was continued for another month, and was then omitted, chiefly because it caused, or he thought it did, severe pain in his ulnar nerves, which, he insisted, came on soon after the injection, and caused him great misery for several hours afterwards. He had had this pain before the commencement of the injections, and my clerk, Mr. McIlwaine, had doubts about the reality of the cause, but the man was very positive, and I think he was very probably correct. His ulnar nerves were clearly those most affected by his disease, and it is fair, therefore, to suppose that the remedy acted upon them in excess.

A second case was one of general paralysis, dysphagia, diaphragmatic palsy, and reaction of degeneration in the muscles in a young man aged 27. All the history that he could give was that, being a carman, and of late carrying sacks of coal, he had, a month before his admission, felt generally out of sorts and easily fatigued. A week later his finger-tips became numb, and then his toes, and gradually he lost all power in his legs, and then in his arms. He was at first given iodide and perchloride of mercury, and he steadily got worse. Then he had three-minim doses of liq. strychnine given internally; but, as he was steadily going downhill, and was swallowing and breathing so badly that I quite feared for his life, I changed the internal administration of strychnine to the hypodermic method after a week. He had 1-50 grain injected night and morning. This was commenced on the fifth, and on the ninth the report stated that there was a marked improvement in the strength of the right arm, and there was considerable improvement in sensation. By the thirteenth he was beginning to have slight control over his legs. His pains, before rather troublesome, were not so severe, and the patient seemed altogether better; and he rapidly improved from that time, so that at the end of a month he was able to get up and go about feebly. He is now, many months later, quite well. It might be added that the real nature of the case still remains obscure to me. The completeness of the paralysis, coupled with his occupation, and a doubtful thickening and prominence over the second cervical vertebra, made me think at first of some cervical pachymeningitics, but I subsequently inclined more to the diagnosis of peripheral neuritis, albeit the cause of it could not even be suggested.

I must only inflict one other case upon you. It is that of a man aged 41, who was admitted for loss of power in his right leg and incontinence of urine. He came in with these symptoms, and there was, on careful testing, some loss of sensation in the opposite leg. His bladder was running over. This and the paralysis made one suppose that there was disease in the cord, rather than outside it, and I feared he had some transverse myelitis, worse on the right side. He had not been in the hospital long when he lost the use of the other leg. He had at first some iodide of potassium and perchloride of mercury. But not finding any marked improvement after a fortnight, I changed it to two-minim doses of the liquor strychniæ of the *British Pharmacopœia*, twice a day, and at the end of five weeks he was up and walking about the ward. He is getting about fairly well now, with some clonus and exaggerated reflexes on both sides; but his chief trouble is frequent micturition, possibly due to some slight vesical irritation still remaining.—*Brit. Medical Journal.*

A FATAL CASE of camphor-poisoning is reported in the *Australian Medical Journal.* The patient was in the habit of nibbling at the drug, and carried it in her pocket. Nothing distinctive was discovered at the autopsy except a slight cerebral congestion. The quantity of camphor found in the stomach was very small.

ABORTION IN CHICAGO.—*The Medical Age* and *The Journal* have editorials on the sensation of the day in Chicago about abortionists. It seems that a young woman undertook the rôle of a newspaper reporter, feigning to be a fallen woman. What degradation, what callousness on her part! What nasty itch for sensation does the whole subject of interviewing generate! Abortion in Chicago may be fearful, but is it surprising when even one woman can be found who is willing to feign to be a fallen woman in order to extract secrets from physicians? Abortion in Chicago dwindles before the sickening performance of one shameless woman.

SURGICAL NOTES FROM THE WILMINGTON CITY HOSPITAL CASE BOOK FOR THE YEAR 1888.

(Reported by W. W. Lane, M.D.)

Case 1.—Gun-shot wound of the thigh. J. W., aged 32, wound from both charges of double-barrelled gun loaded with duck-shot, carried away a large mass of the skin and adductor muscles of the inside of the thigh, exposing the femur and femoral vessels. The torn flesh was well trimmed out, parts irrigated with bichloride solution 1—2000.

The extensive gaping wound was packed with iodoform gauze and held in position by tension and button sutures. The man made a good recovery with scarcely a perceptible halt in his gait.

Case 2.—Necrosis of lower jaw caused by bungling extraction of tooth. Incision along the ramus and angle of jaw, and necrosed portion removed with the forceps.

Case 3.—Mrs. C. M., aged 69, carcinoma of breast. Condition on admission fairly good, though the parts were much inflamed by caustics in the hands of a charlatan. Amputation with excision of the axillary glands. Thorough antisepsis, line of union supported by lead button sutures, primary union the result.

Case 4.—J. K. M., aged 52, hæmorrhoids of many years standing. The tumors injected with 4 per cent. solution of cocaine and removed with silk ligature.

Case 5.—Mrs. S. C. N., aged 40, enlarged spleen. Removed by laparotomy. Death on third day from peritonitis.

Case 6.—H. H., aged 18, fracture of femur middle third, from fall of lot of bags. Treatment by Smith's anterior splint; minimum shortening, scarcely perceptible.

Case 7.—W. G., aged 39, luxation of hip-joint. Struck by a boom from hoisting derrick; head of femur thrown into the thyroid foramen; fracture of the 6th rib and severe flesh wound of the leg; reduction under chloroform. Good recovery.

Case 8.—Compound fracture of tibia. E. M., aged 9. Binder's board and roller. Good result.

Case 9.—L. S., female, aged 16, compound fracture of leg and scalp wound. Died on table before amputation could be performed. Postmortem revealed fracture of lower part of occipital bone, with rupture of posterior cerebral artery. Railway injury. No anæsthetic used.

Case 10.—H. G. H., aged 48, fracture of femur upper third by fall of car-wheel. Treatment by Buck's extension method. Good result; very slight shortening.

Case 11.—E. D., aged 37, strangulated hernia. Incarceration in left inguinal canal; taxis and other means with and without chloroform failed, descent of gut in scrotum, tumor very large, free incision over swelling, the edge of ring nicked with knife and the contents returned, the opening in ring brought together by silver sutures. Primary union of wound. Good result.

Case 12.—A. U., aged 28, compound fracture of leg from railway engine. Amputation below knee, circular method. Good result.

Case 13.—Mrs. J. F., aged 37, cystic degeneration of both ovaries. Laparotomy; removal of the ovaries. Good result.

Case 14.—Mrs. P. H. S., aged 45, carcinoma of uterus. Vaginal hysterectomy. In this case the cervix had been sometime before amputated. Discharged on twentieth day; disease subsequently returned.

Case 15.—Mrs. M. A. P., aged 40, prolapsus of uterus, complete, with laceration of cervix and perineum of three years standing. Relieved by appropriate operation.

Case 16.—D. C., aged 27, laceration of cervix. Emmet's operation. Good result.

Case 17.—L. W., aged 22, laceration of perineum. Immediate operation. Good result.

Case 18.—H. F. H., aged 37, stab wound of arm of seventeen months standing; supposed to be a necrosis until operation revealed a knife-blade 2½ inches long imbedded in the shaft of the humerus.

Case 19.—J. B., aged 40, gun-shot wound of abdomen; the ball struck end of rib next to the last on right side, fracturing it and ranging downward toward the lower dorsal vertebræ; could not be located; free discharge of healthy pus for some days, when patient made a good recovery.

Case 20.—W. W., aged 28, fracture of skull. This man received a blow on side of head just above the ear; there was no external sign of injury, either cut or bruise; admitted several days after with free discharge of serous fluid from the ear. Pain in the head intense, no relief from remedies, constantly begging to have his head opened. Died four days after admission and eight after reception of blow. Autopsy revealed a fissure through the right parietal bone, extending through the temporal into the head; blood-clot size of dollar found on dura mater, with latter torn slightly, also light tear in brain.

Case 21.—Mrs. E. I. C., aged 40. This lady had a large tumor removed by laparotomy about a year ago. The tumor was attached by broad adhesions to the fundus of uterus, and it was found necessary to use part of it as a pedicle, being divided and tied in sections with very strong silk ligatures. The stump was well seared with actual cautery.

This lady, after removal of tumor, returned home comparatively well. In the spring she began to suffer great pain in the bladder with violent tenesmus and painful micturition; finally she passed the ligatures from the pedicle per the urethra, and which she sent in letter for inspection; a globular tumor in the meantime commenced to develope somewhere in the neighborhood of the operation. By advice she returned to the hospital, was thoroughly examined, but no satisfactory diagnosis could be determined on in regard to the swelling. Her suffering now was very great, and health and strength rapidly failing. Some relief was obtained, however, by irrigating the bladder twice daily by a tepid solution of boracic acid and water— ʒ i, Oj. Suddenly one morning, when the injection was being thrown up, there was a free gush of pus from the meatus, with the immediate subsidence of the tumor as the result. From this time she continued to improve, and left the Hospital on December 10th entirely restored to her usual good health.

Dr. John P. Hamilton, the New Editor of the Journal of the American Medical Association.—Dr. Hamilton has formally assumed the duties as editor of *The Journal*. He has rare abilities of many sorts, not the least of which is he wields a skillful pen, and we may expect to see *The Journal* attain a standard position among the medical periodicals of the world. No journal with which we have acquaintance has developed more substantially in the last year or so than this, and with the same able assistant the literary smoothness of its columns will doubtless be sustained. The American Medical Association has a numerous membership, and its patronage alone is able to place a journal in the front rank of literature. Dr. Hamilton knows men as well as books and practical medicine, and he will be a tower of strength in some of the emergencies which now and then overtake that ponderous Association of which *The Journal* is the organ.

OBSTETRIC NOTES.

(1) Hydroperitoneum Accompanying Pregnancy and Persisting after Delivery—(2) Abscess of the Ovary from Aseptic Transference Post-Partum—Discharge of Abscess through the Bowels—Recovery.

Mrs. Q., multipara, was delivered of a rather feeble child, ——— 1888, but was alarmed after delivery to find that her abdomen was about as large as at full term, and dismissed her physician because he advised a course of treatment not in accordance with her ideas. When the writer took charge of her case the peritoneal cavity was greatly distended, and the urine gave a dense precipitate of albumen. The legs were dropsical, and the skin had cracked in several places, and an obstinate pustular eczema had set in. She was especially weak, and it became a question of some moment what was best to be done. There was a strong temptation to evacuate the cavity, presuming upon the correctness of the idea that the accumulation of serum was due to the pressure of the fœtus, and was, therefore, the product of mechanical arrest of circulation, the hope being that discharge of the fluid followed by supportive treatment would relieve the dropsy of the lower extremities. The very albuminous condition of the urine, however, showed that there was nephritis, and that treatment must be addressed to that condition.

The following plan was resorted to: Digitalis and iron were given in as full doses as the stomach would allow, and a heaping teaspoonfull of compound jalap powder ordered every night. The latter remedy was resorted to with many misgivings, considering the degree of anemia indicated, but the results were very marked. Occasionally it was necessary to discontinue both medicines for a few days, and then when resumed the results were most gratifying. In six weeks the dropsy had disappeared, and the mother made a good convalescence up to the point of her usual rather delicate health.

There is nothing remarkable in treating a dropsical case with compound powder of jalap—in fact, the progress of medicine has evolved nothing as good as this veteran old remedy associated with quinine and iron—but the interest in the case resides in the fact of its being one of peritoneal dropsy, instead of anasarca. The writer has never before seen this form of dropsy associated with pregnancy, and a quite diligent search among the best works on the puerperal state brought to light very little experience. Is it an error to presume that it is of unusual occurrence?

Case 2.—A multipara was confined without having anything remarkable in the course of the labor, but made a poor recovery. Six weeks after delivery she had pain in the right iliac region, with fever. When examined by the writer there was discovered a tumor, hard, tender, dipping deep into the inguinal region. There was still some inoffensive lochial discharge. The patient lived in a malarious atmosphere, and the continued fever seemed to get its persistency from malarial causes, until examination revealed the tumor. The diagnosis was inflammation of the ovary from septic transference incident to child-bed.. Involution had proceeded quite favorably, but hot vaginal douches were at once directed morning and night, and they kept up faithfully. Quinine was given to attempt reduction of fever, and then syr. hypophospt. compd. was given. At each irrigation for weeks there were to be discovered small shreds of dark-colored flakes, apparently old fibrin, and occasionally slightly stained mucus. Under the irrigation the fever disappeared for a while, and the patient seemed to be improving. But there was always one puzzling element connected with the tumor, that when there was pain in that region the patient, who was a most intelligent and refined lady, always insisted that the pain was in the bowels, and that as soon as the bowels were moved, the pain measurably ceased. This point was dwelt on so persistently and with so much show of reason, it was faithfully studied in connection with the progress of the tumor. Four months had now elapsed and the tumor assumed a more serious aspect: it was perceptibly enlarged, filled the palm of the hand, was immovable, was sensitive to moderate pressure, and reached a point at which it seemed necessary for an explorative laparotomy at least. In the meantime, the discharges from the bowels were remarkable. They consisted of discharges of grayish shreds, mixed with large quantities of pure bile, with black, hard scybalæ floating on the surface. These discharges from the bowels were always followed by relief of pain, and sometimes in subsidence of swelling.

The crisis arrived now, when it seemed that there was imminent a rupture of the tumor, and the family decided to ask Dr. Goodell, of of Philadelphia, to take charge of the case and decide whether or not a laparotomy was the thing to do. Philadelphia is a far way to send a patient, but so admirable are the appointments of the trunk road of the Atlantic Coast Line, an invalid can be taken upon a couch and landed in one of the medical centres with as much ease as to remain quietly in bed at home, excepting this, that the loss of sleep incident to the awaking caused by stopping at stations, rather discounts the usual quota of sleep. The patient was delivered into the hands of Dr. Goodell and examined, returning home all in four days, making a trip of over a thousand miles, with but slight disturbance. Dr. Goodell advised against operative procedure mainly (1) because the mother was still nursing her infant; (2) because the tumor was somewhat obscure. He advised her return, and advised the administration of a ferruginous tonic, with a saline cathartic quite often. Hunyadi water was selected as the cathartic, and the patient directed to keep quiet in bed on her back, and a blister to be applied over the tumor. With the exception of the latter item, the treatment was carried out faithfully, only one blister having succeeded, and was then discontinued because not considered advisable further. The intestinal discharges now and again exhibited the same grayish shreddy masses, with large quantities of bile. Pain was relieved by antipyrin, 5 grs., repeated at an hour's interval, 15 grs. usually doing very well. So great was the uneasiness now, and fever again showing itself, it was thought necessary to start out with a brisk calomel cathartic, and follow it with quinine. The action from the calomel resulted in a large discharge of shreddy masses with muco-purulent matter, quite inoffensive, but evidently the contents of an old abscess.

The theory of this case is as follows: It was a case of ovaritis due to septic transference from the uterus; this septic condition was due to the retention of small pieces of secundines; the ovary discharged its contents through the intestines, the sequel being that from the date of the mercurial purging mentioned above, the tumor diminished, became elastic, painless, and finally disappeared, leaving the patient in an excellent stage of convalescence with good prospects of complete recovery.

CORRESPONDENCE.

OPINIONS ASKED IN REGARD TO TWO SIMILAR CASES OF FATAL DISEASE.

Messrs. Editors North Carolina Medical Journal:

I wish to present the clinical histories of two similar cases of fatal illness to the editors and readers of the North Carolina Medical Journal, and desire opinions as to the exact nature of the maladies.

Case I.—S. W. W., a robust country boy, 19 years of age, of stout build, florid complexion, of excellent general health and good habits, was taken suddenly ill January 14th, 1882, about two hours after eating a hearty dinner at his boarding house.

I saw him a few minutes after the attack began, about 3 p. m. I found him walking the floor, his hands pressed over the abdomen, groaning from pain. His face was very pale and covered with large drops of sweat. The pulse was full, soft and slow. The pain seemed to be confined to the soft parts between the umbilicus and the ribs, yet there was a severe pain in the right shoulder. He was so restless that any physical examination was impossible. After giving a full dose of morphia, hypodermatically, an emetic of ipecac was given and repeated. The contents of the stomach were thoroughly evacuated and afterwards a large action from the bowels was had, but there was still no relief. Anodynes, narcotics, hot baths, liniments, stupes, in fact, the whole array of remedies usually resorted to in such cases, were pressed in vain. After daylight January 15th, the patient seemed to be narcotized, and for about three hours was somewhat more quiet, but the pain remained. I had noticed that the pulse was steadily losing in volume and strength. There was no vomiting, but a continuous effort to eructate gas. The abdomen was distended uniformly. There never was the slightest indication of reaction, and the patient had one paroxysm of pain after another until 11 p. m. of the 15th, when he suddenly exclaimed, "There, now, the pain is gone!" His pulse at this time was a weak flutter, without any distinct beats. He lay quietly, talked clearly and rationally to his friends for an hour; the action of his heart during a great part of this time was inappreciable. About 12 m. he asked for water, raised himself in bed, swallowed a small quantity, sank back, breathed several times at intervals of twenty seconds, and died.

The heart had ceased to act several seconds before breathing stopped. There was never during his illness any difficulty in respiration, and his voice was clear and distinct up to the instant of death.

Case 2.—M. L. H., capitalist, financier and manufacturer, aged 72; tall, erect, appearing much younger than he was; of exceptionally regular habits and excellent health, was taken Sunday morning, December 23d, with a violent pain over the hypochondriacal regions. I was called to see him and administered a hypodermatic of one-fourth of a grain of morphia. In twenty minutes he was entirely free from pain, therefore I prescribed a laxative and left. Mr. H. attributed this attack to a plate of frozen peaches eaten at breakfast. The day following this attack he was in his office and on the streets, in the transaction of his business, apparently as well as ever. I met him frequently during the following two weeks, but his illness was not mentioned.

Monday, January 7th, at 11 a. m., I was hastily summoned to see Mr. H. at the drug store of Dr. J. H. Enniss. When I went in he sold me that he had eaten a bowl of stewed oysters for breakfast, and that they had given him a colic. He then for the first time said: "I have never recovered from that other attack, as I have been suffering from pain and soreness in both sides ever since, so much so that I could not sleep, neither could I lie on either side." The pain was very great over the hypochondriac regions and in the right shoulder. Morphia was administered hypodermatically and the stomach evacuated by the administration of emetics (mustard, warm water and ipecac). Notwithstanding the prompt action of the medicines he grew worse. His skin was cold and covered with a profuse sweat, his face was of an ashen hue, the pulse was not accelerated, but it was soft and easily compressed. He described the pain as not a cramp, but such as would be made by "mashing and tearing" the tissues. His abdomen was uniformly distended, and he was continually making efforts to dislodge the gas from the stomach.

During all this time he was continually speaking of the pain in his *right* shoulder. He wished to go home; therefore, as soon as he was somewhat narcotized, I took him with me in my buggy to his house. He walked to the buggy and from his front gate to the house, the latter a distance of at least one hundred yards. He kept both hands clasped over the bowels. In spite of anodynes, narcotics, stimulants, etc., he continued to grow worse. His pulse lost in volume and force, slowly, but steadily.

At 2 : 30 p. m. he arose from a sofa upon which he was reclining, asked a gentleman near if he did not think he ought to have the morphine again. He sat talking with the gentleman for a minute, perhaps, then, lying down upon the sofa, he continued the conversation for a few seconds longer. Suddenly his breathing ceased, there was a long interval succeeded by a deep gasp, another and longer interval succeeded by another gasp, and he was dead. There had never been the slightest difficulty in his breathing and his speech was clear and distinct. The abdomen was distended at first and continued to enlarge to the end. Repeated inquiries failed to obtain any complaint of pain in the chest. Across the abdomen, in the region of the transverse colon and in the *right* shoulder, were the only painful parts.

In Case 1 there was an obscure history of a fall across a log, striking the abdomen, some two weeks before the fatal illness, but the report could not be verified. What was the cause of the pain, suffering and death? I, who saw both cases, was forcibly struck with the similarity of the symptoms and modes of dying in each.

Was it angina pectoris? If so, why was the pain located, as described, and why was there no pain in the left chest? In neither case could a physical examination be made, but could there have been hæmorrhage into the abdominal cavity? I should like to see an explanation of the symptoms.

Respectfully, J. R. CAMPBELL, M.D.

Salisbury, N. C., January 9, 1889.

INFANT SUFFOCATION.—At an inquest on the body of an infant which had been overlain in a bed occupied by the two parents and two children, the coroner observed that in Germany it was a criminal offence to overcrowd beds with young children.—*British Medical Journal.*

REVIEWS AND BOOK NOTICES.

Medical Classics.—Quite a number of the volumes belonging to the Library of the above name by E. B. Treat, 771, Broadway, of which we will endeavor to give our readers our views:

Medical Diagnosis. By J. Graham Braune, M.D., F.R.C.P.E. Second Edition. Illustrated. 8 vo. Pp. 248.

A reading of the author's preface convinces one that he has grasped the object of diagnosis and the needs of the student. "A man who has clearly grasped a case in its entirety, who has separated the essential from the accidental, and who has ascertained the weight and bearing of each individual symptom, can go steadily forward in the treatment of his case without experiencing that harassing doubt which arises from partial or crude observation, and which, to a conscientious mind, cannot but prove a severe trial."

After general consideration of the aspect, condition and circumstances of a patient, the condition of the alimentary system are described, then the examination of the abdomen, the hæmapoietic system, the circulatory system, the respiratory system, the integumentary system, the urinary system, the reproductive system, the nervous system, the locomotory system.

The illustrations are few and far between, and not particularly noticeable, but the language of the author is plain and succinct, and his teaching qualities are good.

A Treatise on Headache and Neuralgia, including Spinal Irritation and a Disquisition on Normal and Morbid Sleep. By J. Leonard Corning, M.A., M.D. Illustrated. 8 vo. Pp. 231.

There was a time in the literature of medicine when headache and its complications were considered beneath the dignity of a separate place in a text-book or monograph, being treated entirely as a symptom of some other diseases, and therefore could only be separated unnaturally from them. But the treatment of headache has puzzled generations of doctors, and needs to be studied scientifically. This the author has done, and he has presented a good volume containing many practical and new points of diagnosis and treatment. The local medication of nerves to which Dr. Corning has given so much attention is described in two chapters, and has already become one of the much valued means used by the progressive profession. The last two chapters, on the physiology of sleep, secondary insomnia and idiopathic insomnia, are excellent and practical parts of the volume. This is, upon the whole, one of the best of the series.

A PRACTICAL TREATISE ON NERVOUS EXHAUSTION (Neurasthenia). Its Symptoms, Nature, Sequence, Treatment. By Geo. M. Beard, A.M., M.D. Edited, with notes, by A. D. Rockwell, M.D.

Dr. Beard was the first to describe the morbid condition which he named neurasthenia, and since that time the profession has very frequently feasted on the numerous papers by other observers, many of whom were but pliant followers of the master. In the meantime neurasthenia has been made the scape-goat of many a diagnosis, and many a fashionable invalid has gloried in the possession of the new disease. Dr. Beard's description and name of the disease have withstood the test of time, and his successors have succeeded in more clearly defining its limits and boundaries. The old term debility, which answered such an admirable part in the nomenclature of a quarter of a century ago, is almost entirely crowded out now by the new.

The editor is well-known by his excellent contribution to electrotherapeutics, and now he has placed the profession under renewed obligation by the presentation of this treatise of his dead colleague in an interesting and instructive form, in short compass, and in clear, readable pages. The price of these volumes is $2.25 each.

THE PATHOLOGY AND TREATMENT OF DISPLACEMENTS OF THE UTERUS. By Dr. B. S. Schultze, Professor of Gynecology in Jena. Translated from the German by Jamesen J. Macan, M.A., M.R.C.S., and Edited by Arthur Macan, M.B., M.Ch., with 120 Illustrations. New York: D. Appleton & Co., 1888.

The author gives a full description of what he considers the normal position of the uterus, a knowledge of which, of course, is necessary to the understanding of displacements. The following summary is given in the author's words:

"The normal position of the uterus is determined by its connection with the tissues adjacent to it; by its fixation in the vagina and in the pelvic fascia and by its attachments to the bladder and to the peritoneum. The bundles of muscular fibre in the round ligaments and in the folds of Douglas, give a peculiar character to the peritoneal attachment of the uterus. The action of the round ligaments is to prevent the fundus uteri from retiring permanently away from the anterior pelvic wall; that of the ligaments of Douglas to prevent the cervix from advancing far from the posterior pelvic wall.

"The position of the uterus in the living body is, alas, under the influence of its own weight and of abdominal pressure; the former is hardly perceptible, but the latter is an important factor in maintaining the organ in the normal position.

"When a woman is standing upright and her rectum and bladder are empty, her uterus is nearly horizontal, is more or less anteflected, and is turned a little to the right. This position is to a certain extent modified by the repletion of the bladder and rectum.

"A certain degree of mobility and a possibility of spontaneous yet considerable variation, are essential characteristics of the normal position of the uterus. The position of the uterus during life is determined by bimanual palpation, by measurement taken by the compass, by the sound and by the goncometer.

"After death there is a cessation of intra-abdominal pressure, and also, as far as depends on muscular tonicity, of the action of the round ligaments and of the ligaments of Douglas; the weight of the organ becomes relatively more important, and the uterus is, therefore, often found in the dead body in a position different from that occupied in life.

"The position of the ovaries is, to a certain extent, independent of that of the uterus. They are attached to the walls of the pelvis on either side with their longitudinal axes parallel to its antero-posterior diameter. Their connection to the pelvis is situated higher and further back than that to the uterus. When the patient is lying down we may, by digital examination per vaginam, feel their uterine extremities directed a little backwards at their median attachments, and their free borders directed backwards and downwards."

The second chapter deals with definition, classification and statistics of displacements; the third with symptoms and diagnosis of displacements; the fourth with anatomy, etiology and indications for treatment. The second part of the volume is devoted to special pathology, including elevation, anteposition, retroposition, lateral position, lateral version and lateral flexion, torsion, anteversion and anteflexion, retroversion and retroflexion and descent and prolapse of the uterus.

The pessary of the eminent Dr. Hodge in this work, as in all works on gynecology, is the basis of a thousand-and-one variations, to which have been attached the names of other specialists, but the art of reposition of the uterus by pessaries has not advanced much farther than where it was left by our eminent American.

This work is beautifully printed, well illustrated, and each chapter has an excellent summary of its contents, an admirable thing not only for the reviewer, but for the student, who is always by an author who has skill enough to summarize his meaning in a few paragraphs.

The bibliography of the subjects contained in the volume is abundant and the index good. No doubt this work will be read by a great number of persons who are interested in gynecology—and who is not?

A Clinical Atlas of Venereal and Skin Diseases, including Diagnosis, Prognosis and Treatment. By Robert W. Taylor, A.M., M.D. Part III. Venereal Diseases, Part IV. Diseases of the Skin. Philadelphia: Lea Brothers & Co., 1888.

Plate xvii of Part III. portrays rupial syphilis of the arm, of the face, and ulcerating tubercular syphilide in the form of zona; Plate xviii portrays gummous syphilide of the knee, shoulder, ankle and buttocks; Plate xix gives a most pronounced case of non-ulcerating tubercular syphilide of the face and arm; Plate xx gives the appearance of serpiginous syphilide on the face, shoulder and arm of a man; Plate xxi gives two forms, one of pigmentary syphilis on the neck of a lad, and one of precocious ulcerating tubercular syphilide; Plate xxii brings us to a new subject, hereditary syphilis, three examples of which are given, viz: erythematous syphilide in patches, diffuse erythematous syphilide and papular syphilide; Plate xxiii continues hereditary syphilis, and we think we recognize a reproduction of Hebra's portraits in Fig. 2, papular syphilide (this plate contains seventeen figures). Part IV. gives us non-syphilitic diseases, erythema multiforme, erythema nodosum (much like those in Hebra's portraits); erythematous, papulous, vesiculous, squamous and impetiginous eczema apparently from one subject; eczema rubrum (impetiginous) and simple (from Hebra); acne in a young man (from Hebra); psoriasis (from Hebra); psoriasis of the arm and hand; tinea favosa (from Hebra), making in all a very rich collection. The text is very carefully written for practical readers, and the whole work is a sumptuous example of book-making. It would be unjust to the author or publisher to attempt more than a mere superficial description of this work, as it must be critically examined and studied to be appreciated.

It is being issued in parts and sold by subscription. Any physician who is making his library keep pace with his necessities would do well to add this to his collection, and we feel satisfied that time will not diminish the excellence of its standing, although its rivals may be numerous.

THE PHYSICIAN'S LEISURE LIBRARY—BRIGHT'S DISEASE. By Alfred L. Loomis, M.D.

Dr. Loomis has compassed the very important subject above in the space of 119 small pages, a feat which could only be accomplished by one who has mastered the subject. If nothing is to be written now about Bright's disease which is considered new, much can be done by clearly and succinctly restating the history, pathology and therapeutics of a disease which has influenced much of our modern pathology and shed light upon conditions formerly unknown. The history alone of this disease, if carefully studied by the young pathologist, will teach him as much of the progress of medicine as he could acquire by delving in the portly old volumes of a past generation. One can read this little volume in one sitting, and not tire.

CLINICAL LECTURES ON CERTAIN DISEASES OF THE NERVOUS SYSTEM. By Prof. J. M. Charcot. Translated by E. P. Hurd, M.D'

The diseases treated of are spiritism and hysteria, on isolation in the treatment of hysteria, choreiform movements and tremblings, muscular atrophy consequent on certain articular lesions, contractures of traumatic origin, muscular atrophy consecutive to articular rheumatism; on hysteria in the male subject. The latter disease is *the* subject of this volume, and is treated in masterly manner by one who has become a great favorite with American readers chiefly through the very excellent translations of them done by Dr. Hurd.

THE MODERN TREATMENT OF DISEASES OF THE KIDNEY. By Prof. Dujardin-Beaumetz. Translated by E. P. Hurd, M.D.

In this number of the JOURNAL will be found the treatment of Urinary Lithiasis, from the advanced sheets of this little volume. We believe it will not fail to instruct, and it may be taken as an example of the other chapters. The cuts in our article are not reproduced, but it does not essentially alter the value of the text.

WOOD'S MEDICAL AND SURGICAL MONOGRAPHS.

Messrs. Wm. Wood & Co. have begun the publication of a series of monographs in monthly installments to take the place of the Annual Library which had such a long run. The first and second numbers (January and February) are out, and prove to be very valuable selections from foreign authors.

Many of the essays presented have appeared in the *British Medical Journal* and *Lancet*, and deserve to have a more permanent shape in the form now presented. The price is reasonable and the typography excellent.

The February number contains:

Gonorrhœal Infection of Women, by W. J. Sinclair, M.D.

On Giddiness, by Thomas Granger Stewart, M.D.

Albuminuria in Bright's Disease, by Dr. Pierre Janton.

The next issue will contain:

Neurasthenia and Its Treatment, by Dr. R. H. von Ziemssen.

The Tongue as an Indicator of Disease, by W. H. Dickson, M.D., F.R.C.P.

On the Treatment of Cystic Goitre, by Thomas M. Howell, F.R.C.S.S.

New Remedies, by Dr. C. Cauquil.

There is a demand in the profession for cheaper monographs and text-books, to keep pace with the cheapest volumes in general literature.

BLUE GUMS IN NEGROES.—A Florida correspondent of the *Medical and Surgical Reporter* asserts that a bite from a negro, with the blue gum is very dangerous, giving a case in point. Is this new?

AORTIC ANEURYSM CURED BY LIGATING THE RIGHT COMMON CAROTID AND SUBCLAVIAN ARTERIES.

At a meeting of the Southern Surgical and Gynecological Association Dr. F. T. Meriwether, of Asheville, N. C., reported a case of aneurysm of the ascending aorta, involving the innominate artery, which was operated upon by him at the Mission Hospital at Asheville, N. C., on November 3d. The patient was 37 years of age, female, no history of syphilis. The aneurysm was primarily only in the ascending portion of the arch, but while under observation it began to involve the innominate. The right common carotid and subclavian arteries were tied with strong catgut. On the eighth day the dressing was removed and union had taken place. Not a drop of pus or exudate had discolored the gauze. No bad symptoms followed the ligation and the bruit and pulsation decreased every day. She was discharged as cured on the twenty-first day. As well as could be determined the aneurysm was three inches in diameter. This is the third case of operation upon aneurysm of the ascending aorta and the second cure, Wyeth, of New York, reporting one in 1880 as a cure, the patient dying one year afterwards. I find only eight cases recorded of aneurysm involving the aorta and innominate and operated upon by simultaneous ligation of both arteries.

* * *

Lichen Ruber as Observed in America is the title of a handsomely illustrated article by R. W. Taylor, M.D., of New York. The frontispiece is chromo-lithograph and has all of the minute detail which photography has made us acquainted with of late years. A folded plate, with many figures, some of them illustrating the pathology of the disease in question, is rendered in some one of the many "process engravings" and is a pleasure to the eye by reason of the clear definition afforded. Lichen ruber is one of the, formerly, very rare skin diseases, and the author points out the distinction which exists between *lichen ruber and lichen planus.*

Dr. Carl L. Jensen, the manufacturer of a noted preparation of pepsin, died in New York, January, aged 43.

EDITORIAL.

THE NORTH CAROLINA MEDICAL JOURNAL.

A MONTHLY JOURNAL OF MEDICINE AND SURGERY, PUBLISHED IN WILMINGTON, N. C.

THOMAS F. WOOD, M. D., Wilmington, N. C., } Editors.
GEO. GILLETT THOMAS, M. D., " }

☞ *Original communications are solicited from all parts of the country, and especially from the medical profession of* THE CAROLINAS. *Articles requiring illustrations can be promptly supplied by previous arrangement with the Editors. Any subscriber can have a specimen number sent free of cost to a friend whose attention he desires to call to the* JOURNAL, *by sending the address to this office, Prompt remittances from subscribers are absolutely necessary to enable us to maintain our work with vigor and acceptability. All remittances must be made payable to* THOMAS F. WOOD, M. D., *P. O. Drawer* 791, *Wilmington, N. C.*

THE NORTH CAROLINA SANITARY ASSOCIATION AN ESTALISHED FACT.

When we penned in our last issue our opinion favoring the Sanitary Convention proposed to be held in Raleigh on the 6th February, we were sanguine of some degree of success, but did not conceive that it would be the most successful primary organization of any scientific body in the State up to this date. But the anxious day has come and gone, and we had the pleasure of seeing assembled nearly seventy representatives of the larger towns in the State, and many of the various callings in life, lifting the movement out of the limited range of the medical profession, and placing it at once as a State issue, in which citizens of all stations are equally interested. It was none the less gratifying, though, to see the familiar faces of many of the leaders in the medical profession whose faith in sanitary advance has been perennial, working side by side with municipal officers, sanitary engineers, chemists, ministers, teachers, lawyers, etc., showing that at last North Carolina has entered the field of sanitary investigation with spirit and determination.

The North Carolina Board of Health assembled at the same time, the members manifesting renewed zeal in their work, and doubtless filled with bright hope for the future. They took hold of the question of the registration of vital statistics, producing a draft of a bill providing for the registration of births and deaths in all towns of 500 and more inhabitants, by the census of 1880, which we trust will become a law.

The scientific quality of the work was of a uniformly good order and the topics treated were so well selected that the interest in them was maintained throughout. There was no delay, no intervals of suspended animation, so that we can safely say that there has been no such meeting, in our recollection, of a scientific body.

It was clearly evident at once that the Convention would become a permanent body, the recommendation of the Committee on organization being approved, and *The North Carolina Sanitary Association* is one of the fixed facts.

Time will show that such a body was much needed, and that the selection of a time midway between the annual meetings of the State Medical Society provides against antagonism of the two bodies, and gives the State Board of Health an auxiliary of much needed helpers. The Conjoint Session of the Board with the State Medical Society takes up time sometimes begrudged and does only the good of keeping up the relations which naturally exist between them.

We give a good part of our space to the transactions of the Sanitary Association, and we will be pleased to take the names and addresses of any of our readers either as members or as subscribers to the volume of the Transactions which will be ready for delivery next month.

MINUTES OF THE SANITARY CONVENTION ASSEMBLED 6TH FEBRUARY, 1889, AT RALEIGH, N. C.

RALEIGH, N. C., February 6, 1889.

Pursuant to a call issued on the 10th day of January, 1889, signed by the following named gentlemen, they assembled, with many other students and friends of sanitary science, in Raleigh.

E. B. Neave, Mayor of Salisbury.

T. J. Sumner, Chairman County Commissioners Rowan county.

J. J. Summerell, M.D., Superintendent Health Rowan county.

J. L. Ludlow, C. E., member N. C. Board of Health, Winston.

Charles Buford, Mayor of Winston.

E. B. Borden, Chm'n. Co. Comm. Wayne county.

J. E. Peterson, Mayor of Goldsboro.

Thomas Hill, M.D., Coroner Wayne county.

L. S. Townsend, Mayor of Lumberton.

John A. Barringer, Mayor of Greensboro.

A. A. Thompson, Mayor of Raleigh.

H. S. Harkins, Mayor of Asheville.

A. T. Hill, Mayor of Kinston.

J. H. Tucker, M.D., member N. C. Board of Health, Henderson.

Thomas W. Goodrich, Mayor of Henderson.

Fletcher R. Harris, M.D., Supt. Health Vance county.

F. B. McDowell, Mayor of Charlotte.

Augustus Fogle, Mayor of Salem.

John McDonald, M.D., member N. C. B'd of Health, Washington.

Prof. W. J. Martin, Davidson College.

J. J. Fowler, Mayor of Wilmington.

Julian M. Baker, M.D., Supt. Health Edgecombe co., Tarboro.

Thomas F. Wood, M.D., Sec. N. C. B'd of Health, Wilmington.

R. N. Williams, Chm'n Co. Comm. Edgecombe co., Tarboro.

William E. Fontain, Mayor of Tarboro.

George G. Thomas, M.D., member Quarantine Board Cape Fear River, Wilmington.

John C. Chase, C. E., City Engineer and Supt. Clarendon Water Works, Wilmington.

W. G. Curtis, M.D., Quarantine Physician, Southport.

J. W. Jones, M.D., President N. C. B'd of Health, Tarboro.

H. T. Bahnson, M.D., member N. C. B'd of Health, Salem.

Prof. F. P. Venable, Ph.D., University of N. C.

W. T. Ennett, M D., Supt. Health Pender county and President N. C. Medical Society.

H. B. Battle, Ph.D., State Chemist, Raleigh.

Richard H. Lewis, M.D., member N. C. B'd of Health, Raleigh.

James McKee, M.D., Supt. Health Wake county, Raleigh.

W. P. Beall, M.D., Greensboro.

Prof. W. G. Simmons, Wake Forest.

W. G. Freeman, M.D., Murfreesboro.

The meeting was called to order in the Mayor's room by Mayor A. A. Thompson, member of the Committee of Arrangements, at 10½ o'clock a. m.

Prayer was offered by the Rev. Dr. Watkins.

Governor D. G. Fowle honored the Convention with his presence and delivered a very spirited address of welcome to the Capital. After declaring his approbation of the objects of the Convention he said:

"I want to call the attention of this Convention to one matter in particular. The Governor of Alabama, under a resolution passed by the Legislature of that State, has appointed a Convention to be held at Montgomery on the 5th March, 1889, for the purpose of adopting certain quarantine regulations for the benefit and protection of the Southern States. At his request I have appointed a committee to be there, and I would ask you to designate certain gentlemen who would be acceptable to them to represent North Carolina in that quarantine Convention, and a commission will be issued by the Executive of North Carolina to go as accredited representatives of the State to every man designated by this Convention, even if it should be to the number of fifty.

"I believe that this Convention is a move in the right direction, and I wish I could say to you to-day that I believe our friends in the Capital will give an appropriation for the purpose of making this organization permanent, but I fear you will not be able to get it at this Assembly. I know, however, that I am addressing men who never give up while there is life, and therefore I am satisfied you will keep up your organization for at least two years, when it will be the duty of the Assembly to assist this organization in the great work it has undertaken to perform.

" Whenever this Convention adjourns it will give me great satisfaction if each and every member of it will come to the Executive Office and allow me there to extend to you the courtesies of North Carolina as her chief executive officer.

THE CHAIRMAN—The object of the Convention will now be explained by Dr. R. H. Lewis, of Raleigh.

DR. R. H. LEWIS—I am very sorry, indeed, to have to make an apology to this assemblage, but unfortunately for the last week or two my time has been so occupied that it has been impossible for me to prepare an address explanatory of the objects of this meeting. I will, however, try to do the best I can in setting forth the object with which we are assembled. I expected to address a mixed audience composed of the laity as well as of the profession, and I regret to see that the former is not more fully represented. It is wel known that the medical profession, who have to deal with disease, have been the pioneers in this movement, which is one of the children of this nineteenth century, and the principal promoters of it, and therefore take the most interest in it. Sanitary science has advanced more rapidly since the germ theory has been more generally accepted as the cause of disease. We cannot yet lay violent hands upon these enemies of the human system and throttle them. It is true we know comparatively little about germs, but we know something. We know, for instance, that they love to dwell in certain localities, that is to say, in filth, and that, having developed there, they make inroads upon the system and produce disease. It is the duty of the sanitarian, having discovered the conditions under which they live, to lay waste their country with fire and blood, and if possible wipe them off the face of the earth, and the question for us to discuss is the best methods of getting rid of the accumulations of filth. We know that one of the favorite avenues of approach to the human system through the drinking water, as is particularly shown in typhoid fever. As an instance of this we have the outbreak in Plymouth, Pennsylvania, where the germs were thrown out upon the snow. Soon after a thaw occurred, the snow melted and was washed down a mountain stream into the reservoirs, and just at the end of the computed period of typhoid fever, which is fourteen days, the first case appeared, and that first case was just below the dam into which the melted snow was washed. The disease continued to spread, and in a short time, comparatively speaking, there were from 800 to 1,000 cases in that town of 10,000 people. A striking thing about it was that the people who had typhoid fever were the people who drank from this mountain stream, which, according to the chemist, was quite pure, whereas the people who drank from the wells, which were simply abominable, were entirely free from this disease. It is therefore clear that the question of pure drinking water is a matter of the very first importance. No doubt other diseases enter the system through the drinking water. We know, too, that these enemies of our system are not all native born, but some of them are foreign; they are savages, so to speak, that come upon our shores from across the sea—cholera, yellow fever and possibly diphtheria—and we want to devise the best means of keeping them out. That being the case, it is of the first importance we should consider the best means of establishing an effective quarantine. I do believe that the most important work for the sanitarian lies in the direction of isolation, the besieging, so to speak, of these colonies of microbes, and preventing their spreading. It is more important for sanitation to take that direction than it is to dwell upon the removal of filth, though both are important. We should do everything we can to establish legislation for that purpose. Another thing, which is the very foundation of all sanitation, is that of vital statistics. We wish to devise some practicable system in order to obtain, as far as possible, these data for the purpose of drawing deductions and making laws. The progress of science is the result of the inductive system of reasoning, and it is necessary to accumulate vast numbers of facts and from them deduce general laws, and finally organize a body for the purpose of carrying out these laws. I would like to say a word for the Board of Health organized for the purpose of carrying out this legislation. We would like to do everything we can to bring about and foster a public opinion that will support the efforts of the sanitarians. While the doctors are the pioneers and the promoters of these laws it is absolutely impossible for them ever to amount to much unless they are supported by the public. The public are too often distrustful of the object of the doctors, and cannot understand why they should try to stamp out disease, and thus destroy their means of living, but they are not animated by selfish motives, they have in view only the good of the people. It is very often the case that those to whom we try to do good do not appreciate our efforts and are cold and uninterested. We want to stir up interest among the people. I feel very much gratified as a resident of the city and as a member of the Board of Health, to see such a goodly attendance, and I only regret that the lay element is not better represented.

Dr. Thomas F Wood moved that Hon. A. A. Thompson, Mayor of Raleigh, be the permanent Chairman, and Hon. J. J. Fowler, Mayor of Wilmington, be the Vice-President of this Association, and J. C. Chase and Dr. Julian Baker, of Tarboro, Secretaries. Carried.

Hons. W. E. Fontain, of Tarboro, and E. B. Neaves, of Salisbury, were also made, respectively, second and third Vice-Presidents.

The above officers were duly elected

Upon the suggestion of one of the members the gentlemen present registered their names.

COMMITTEE ON WAYS AND MEANS.

The Chairman said the first business was the appointment of a Committee of Ways and Means, and the meeting must decide how many that committee should consist of.

Dr. Thomas F. Wood moved that the Committee of Ways and Means consist of three members, which was carried, and the following gentlemen were appointed:

Dr. John McDonald, Washington, proposed by Dr. R. H. Lewis; Oscar Pearsall, Wilmington, broposed by Dr. Thomas F. Wood; Dr. Thomas F. Wood, Wilmington, proposed by Mayor Fowler.

The next business was the appointment of a

COMMITTEE ON PERMANENT ORGANIZATION.

The Chairman asked of how many it should consist.

Mr. J. C. Chase moved that the Committee on Permanent Organization consist of five members, which was carried, and the following gentlemen were appointed:

Dr. Eugene Grissom, Raleigh, proposed by Dr. Hayes; Dr. Beall Greensboro, proposed by Dr. R. H. Lewis; Dr. J. L. Ludlow, proposed by Dr. Thomas F. Wood; Dr. Thomas F. Wood, proposed by Dr. Bahnson; Dr. R. H. Lewis, proposed by Dr. Ennett.

Dr. Thomas F. Wood, moved that the Committee on Permanent Organization be allowed until the evening meeting to consult and report. Carried.

Dr. Thomas F. Wood moved that Dr. J. W. Jones, President of the North Carolina Board of Health, read his paper on the "GAINS OF SANITATION." Carried.

Dr. J. W. Jones then proceeded to read his paper.

Dr. W. G. Curtis, of Southport, read a paper on "MARITIME QUARANTINE," which set forth the subject in a general way, but specially as regards the needs of the people of the Cape Fear Section, and those living along the line of railroad radiating from Wilmington. From a long and practical experience in quarantine Dr. Curtis' opinions and statements had great weight, and at the conclusion of the paper it was expressed as the sense of this meeting that the State ought to make an appropriation for the restoration of the quarantine station, which had been destroyed by fire so many years ago. Interesting remarks ensued upon the action of the Convention.

INLAND QUARANTINE.

The next paper was by Dr. George G. Thomas on "INLAND QUARANTINE," read by Dr. H. T. Bahnson, the author having been called home. Dr. Thomas presented the nature and difficulty of establishing a quarantine inland, which would be effectual and at the same time cause as little hardship as possible. He spoke from a well tested experience, and was able to give suggestions as to practical details which will serve as a guide in future work. Doubtless there is a plenty in this paper to call forth criticism, but it will be the sort of criticism that will surely lead up to practical work.

With this paper the morning session ended.

NIGHT SESSION—FIRST DAY.

The meeting was called to order at 8 o'clock, Mayor J. J. Fowler, Vice-President, in the chair.

The first business was the report of the Committee on Permanent Organization.

After some discussion the following Constitution was adopted:

NAME.

ARTICLE 1.—This Association shall be known as the North Carolina Sanitary Association.

OBJECTS.

ART. 2.—This Association shall have for its objects the inculcation of the principles and practice of public and private hygienics and the investigation of all subjects appertaining to the public health.

MEMBERSHIP.

ART. 3.—Any person may become a member of this Association who is interested in the study and promotion of hygiene, provided he is endorsed by a member of the Association in writing and receives a majority of the votes.

OFFICERS.

ART. 4.—The officers shall be—President, Vice-President, Recording and Corresponding Secretary, and a Treasurer.

MEETINGS.

ART. 5.—The meetings shall be annual, the time and place settled by the Executive Committee.

EXECUTIVE COMMITTEE.

ART. 6.—There shall be an Executive Committee of five appointed by the President, whose duty it shall be to preparre all business in advance of the meeting of the Association, and shall also determine what papers shall be presented, and shall prepare the programme and settle the place and time of meeting.

COMMITTEE ON WAYS AND MEANS.

ART. 7.—There shall be a Committee of three on Ways and Means, who shall prepare for the expenses attending the Association, audit all bills before being paid by the Treasurer, and have charge of the publication of the proceedings of the Association.

HOW THE ASSOCIATION IS TO BE SUPPORTED.

ART. 8.—There shall be an annual assessment of $ for the support of the Association, the amount to be determined by the suggestion of the Committee on Ways and Means, and approved by a majority vote.

PERMANENT OFFICERS.

The following is the list of permanent officers:

A. A. Thompson	President.
John J. Fowler	1st Vice-President.
William E. Fountain	2d "
E. B. Neaves	3d "
Julian M. Baker, M.D., and J. C. Chase, C. E.	Secretaries.
Eugene Grissom, M.D	Treasurer.

Dr. Henry T. Bahnson, of Salem, member of the State Board of Health, then read a paper on "THE WATER SUPPLIES OF TOWNS AND CITIES IN NORTH CAROLINA."

Dr. Bahnson's paper was prepared with great care, setting forth the general principles of sanitation, finally coming to the specific condition of the several water supplies in the towns and cities. The presentation of the subject was elaborate, practical, and will serve for years to come as the expression of the exact condition of our water supplies. This paper was warmly applauded, and was especially recommended for publication and wide distribution. Dr. Richard H. Lewis, in speaking of the paper, said: "Dr. Bahnson has exhausted the subject and put it in a simple and eloquent form, and I am sure nothing would do more to instruct the people of our State on this important question of water supply." (Dr. Bahnson's paper will appear in March JOURNAL.)

Prof. F. P. Venable said: "I would like to call the attention of the Association to a method of purifying water which has lately been mentioned authentically in the papers, and which I think is well worthy of our attention. It is a method that has been in operation in the towns in the Netherlands, and wonderful results are claimed for it. It is called the "Anderson Iron Process," and is dependent upon the purifying action of bright pieces of iron. The water is forced through a pipe into a long boiler of iron, where it comes against a disc, so that it is forced into a broader stream and much more surface is exposed. Inside the boiler are a number of shelves on which are placed numbers of little pellets of iron. The boiler is kept revolving all the time, and as it revolves these iron pellets are lifted and made to fall through the stream of water.

The continual friction of the pellets keeps them bright. At the opposite end of the boiler is a cone which gathers the water again and carries it off. The water, after leaving tho boiler, is aerated by passing over coke, and is then allowed to filter through sand. It comes out perfectly clear and bright, and will stand the test of being kept for several years without changing. This is a very severe test, and, as a rule, only distilled water will stand it successfully. The cost of this process is $3.35 per 100,000 gallons, and the original plant will cost only $5,000 for a capacity of 1,000,000 daily. There are works at Ostend and Antwerp and two or three other places in the Netherlands, and the process has been applied to the waters of the Seine. The process was unsatisfactory at Berlin, and the failure is said to be due to the large amount of iron salts in the water, though that reason was given without proper investigation."

Mr. J. C. Chase, of Wilmington, continuing the discussion, said he agreed with Dr. Bahnson that in a question of such vital importance as the supply of pure water the cost ought to be a secondary consideration. With regard to the process described by Professor Venable the superintendent of the water works at New Orleans had a process with iron which worked admirably with the water of the Mississippi, but the least quantity which could be used at Wilmington left such a taste in the water that it was immediately discarded. Another difficulty they had to contend with in Wilmington was the tidal influence, and nearly every year they had an irruption of brackish water which of course no filter could handle."

Prof. F. P. Venable read a paper by appointment on "THE INTERVENTION OF THE STATE IN THE MATTER OF THE ADULTERATION OF FOOD."

Dr. Venable has given much thought to the adulteration of food, and has from to time contributed to various journals in our State the results of his studies and analyses. He reviewed the history of adulteration and the laws governing them from an early period, giving some amusing examples of the way tests were made for the impurities of milk and bread. He gave also some of the practical methods adopted in France for the suppression of adulteration, showing how powerful a corrective the publication of analyses proved to be, reducing the proportion of adulterated foods very largely. (We hope to present his paper in our next issue.)

Dr. Thomas F. Wood—There is a law of North Carolina providing for the examination of adulterated food, and the employment of the provisions of the law is optional with the citizens. Any one having an article of suspected food can have it examined at the expense of the State by sending it through the State Board of Health to the Agricultural Experiment Station. There has, however, been only one application for examination in eight years, and this application came from a whiskey distiller, who wanted to know if the State Board of Health would permit the examination of whiskey, as he claimed he had the purest whiskey in North Carolina. The Board replied that they did not consider whiskey a food. It is only by such methods as Prof. Venable explains that we can awaken the people from their lethargy, for the people do not know the extent of these adulterations, and no interest is excited. In the report of the North Carolina Board of Health, which is now in press, we have only a short table of analyses, which was kindly made voluntarily by Prof. Venable, of drugs selected from different druggists without their knowledge that they were to be analyzed. The number of analyses made are few, but they are leaders, showing exactly the direction that this matter is going to take. The articles selected were bismuth, quinine, laudanum, U. S. Ph., and grocer's laudanum. There were several specimens of these articles and hardly any were pure. These analyses showed that some of the oldest chemists in this country sell bismuth with a trace of lead in it and other impurities, and whilst they are not harmful, they are certainly not what they pretend to be. It is just this instruction which the people of North Carolina need. They need to have these sermons put under their noses in printer's ink in simple, short articles which they can understand, for it is shown that even people who are trying their best to give us pure food and pure medicines are selling impure ones and are entirely unaware of the fact. I think it highly desirable that papers like Prof. Venables should be sent broadcast over the land, and I hope the Committee of Ways and Means will get enough money to print all these papers.

Upon motion of Mr. Oscar Pearsall, of Wilmington, a committee was selected to confer with the Finance Committee in the General Assembly upon the restoration and improvement of the quarantine station at the mouth of the Cape Fear River. The following gentlemen were chosen: Dr. Thomas F. Wood, Dr. Charles J.

O'Hagan, Dr. Hubert Haywood, Mayor J. J. Fowler, and Mr. Oscar Pearsall.

On motion of Mr. J. C. Chase, it was agreed by the Association to call in a body on Governor Fowle, at the Executive Office, on Wednesday at 10½ o'clock a. m. Adjourned until 10 o'clock Wednesday.

SECOND DAY—MORNING SESSION.

Mayor A. A. Thompson, President, in the Chair. Meeting opened at 10 o'clock with prayer by the Rev. Mr. Cordon.

The first business of the meeting was the reading of a paper by Mr. J. L. Ludlow, C. E., of Winston, on "THE DISPOSAL OF THE REFUSE OF TOWNS." This subject, one of the most difficult of our modern civilization, was discussed from a theoretical and practical standpoint. While some distance in advance of the needs of most towns in the State, it is none too early to set the people to thinking and discussing. Raleigh is naturally anxious about her water supply that her neighbors should not pollute the water shed from which her drinking water is drawn, and she must in turn find out some practical way whereby she can have a system of sewerage that will enable her to dispose of her sewage without doing to her neighbors what she cannot afford to have them do to her. Just such positions are sooner or later to be that of many towns in our State, and any solution of the difficulties will be eagerly sought for.

Mr. Ludlow has put the whole subject before us in a practical form, and we can leisurely study it. The Association was very attentive to his paper, and it was referred, by motion of Dr. Bahnson, to the Committee on Ways and Means.

Dr. Grissom—It is well known that the theory prevailed for a long time (but to what extent it is now prevalent I am not prepared to say) that the excessive use of sewage as a fertilizer, and especially upon edible crops, produces an unhealthy element in these crops, and if I understand Mr. Ludlow he recognizes that effect. I would like to inquire of him to what extent that theory now prevails, whether it was a mere theory and whether it has been overturned by further experience.

Mr. Ludlow—The theory did find a good deal of favor, but it is now established that, with the exception of the excrement of persons suffering from a disease which is infectious by the excrement, as, for instance, typhoid fever, there is no danger either to cattle eating grass or to people eating garden produce fertilized by sewage. There is a garden near Paris fertilized entirely by sewage, and it is famed as producing the finest strawberry crops in the world. The theory is not borne out excepting in the case where the excrement is from typhoid patients, and the only way of eliminating this danger is in the complete disinfection of the excrement by the physicians attending such cases. We cannot treat the sewage sufficiently to overcome this—it should be the duty of the physician.

Dr. Grissom—I am gratified at the explanation given by Mr. Ludlow, and it seems to me to be a source of gratification to those who wish to make the system practicable. I have myself, in the very limited experience I have had during twenty years, had great doubt about the effect of using sewage as a fertilizer broadcast. I know good effects have followed its use, but I attributed it to the fact that the places where it was used required considerable irrigation, and I thought the beneficial effects were due not so much to the manurial properties of the sewage as to the irrigation. Still an experience so limited as my own is not entitled to any great respect, and I am glad to say that the paper will be quite an inducement to study the subject from a more learned standpoint.

Dr. O'Hagan—I have listened to the paper of Mr. Ludlow with a great deal of pleasure, and, I think, with a great deal of profit. This question of the disposal of garbage and animal matter has become a great public question which is tasking the minds of the wisest and best men in the world. We have not reached it yet because the population is too sparse, but at no distant day the question will confront us, and it is well that the medical men and the laity should be educated up to the point that they will know how to dispose of it in the most efficient manner. Mr. Ludlow's paper is valuable inasmuch as he has touched upon all points, not only the sanitary, but the financial as well, and when we have to appeal to the laity and to the municipal authorities the financial question transcends all others. Our governing bodies need to be educated up to the point to know that whatever tends to bring about good health is cheap. Mr. Ludlow's paper is of very great value, and as all educational papers, it ought to be known throughout the State, and I would respectfully suggest that as many copies as the finances of the Committee of Ways and Means will permit, be printed for distribution.

Dr. Thomas F. Wood read a paper on "THE DISPOSAL OF GARBAGE." I would like to remark, before I read my short paper, that I, for one, am very much obliged to Mr. Ludlow for the paper he has just read, and would like to say, for the information of the Convention, that Mr. Ludlow is the Sanitary Engineer for the State Board of Health, and during the last year he has devoted much of his time to the study of the question. One of his papers is now being presented by the State as part of the transactions of the State Board of Health, and I would like to remark that if any gentlemen desire to receive this paper I will cheerfully send them the volume when it is finished, which will be in about two months. The volume will not only contain Mr. Ludlow's paper, but Dr. Bahnson's and others which will be considered as text-books for many years to come. The North Carolina Board of Health desires to keep in advance of the thinking people of the State, and these papers are intended to keep the subjects before them. Knowing what Mr. Ludlow's paper would be, I have taken up the more practical part of the disposal of garbage.

After Dr. Wood's paper was read he introduced Mr. W. F. Morse, of New York, who described in detail the operation of the Engle Garbage Furnace. He explained that it thoroughly consumed all organic matter, without offensive odor, and at a low cost, that it was being introduced into many towns and was giving satisfaction.

Mr. Morse, on being introduced, said that he was not a sanitary expert, and had no new arguments to advance on the subject. He wished simply to bring before their notice the workings of the furnace built by the Engle Sanitary and Crematory Company, which he claimed destroyed all garbage, etc., detrimental to health, and was the simplest, most effective and cheapest manner of getting rid of the sewage and garbage of a town. It might be said that this was a broad assertion to make, but he could give evidence to show that he was fully justified in making it. Mr. Morse then described at some length the furnaces which his company had erected on Staten Island and at Milwaukee, etc., and the severe tests which they had undergone, and read the testimonials from the health officers at these places testifying to the complete success which they had achieved. Mr. Morse stated that these furnaces did not require any expert attendants and would completely burn up all sewage and garbage matter (with the exception of ashes), and that the combustion was so complete that there was absolutely no smoke or offensive smell emitted. The residue was also valuable as a fertilizer. Other methods of utilizing sewage as a fertilizer were costly and more or less dangerous to health, and moreover it had been demonstrated that such fertilizer did not contain more than 4 per cent. of fertilizing properties, as nearly all the ammonia, etc., was lost in the preparation.

Mr. Morse invited health officers and others interested in the subject to communicate with him and he would be pleased to give estimates all particulars for the erection of these furnaces.

Dr. J. H. Tucker, of Henderson, member of the North Carolina Board of Health, read a paper on "THE DUTIES AND RESPONSIBILITIES OF COUNTY SUPERINTENDENTS OF HEALTH."

Dr. Tucker has with earnest effort been studying how to make more practical and effectual the work of County Superintendents of Health, and embodied his thoughts in his very practical paper. It was received with evidences of warm commendation of the Association, and a copy asked to be printed in the Transactions. (During the discussion of the advisability of publishing this and other papers, Mr. Morse subscribed $10 in behalf of the Engle Sanitary Furnace Company.)

THE PROTECTION OF THE PUBLIC WATER SUPPLIES.

Dr. Bahnson introduced the subject of procuring legislation to secure the present and future public water supplies in the State. It was discussed by Col. Keogh, Mr. Ludlow, Dr. Richard H. Lewis, Dr. James McKee, Mr. Engelhard and others, and pending this discussion the time of adjournment having arrived, the whole matter was referred to a standing committee, of which Dr. James McKee is chairman.

The Association then adjourned *sine die*, subject to the future arrangements of the Executive Committee.

THE REVISED LICENSE LAW OF NORTH CAROLINA.

A Bill to be entitled An Act to amend chapters one hundred and seventeen and two hundred and sixty-one of the Laws of 1885, and chapter thirty-four of The Code.

The General Assembly of North Carolina do enact: SECTION 1. That Sec. 2 of chapter one hundred and seventeen of the laws of the session of 1885 be amended by striking out all of said section after the words "*And provided further*," and inserting, "That this act shall not apply to any reputable physician or surgeon resident in a neighboring State coming into this State for consultation with a registered physician resident therein. But this proviso shall not apply to physicians resident in a neigboring State regularly practicing in this State."

SEC. 2. That chapter two hundred and sixty-one of the laws of the session of 1885 be amended by inserting after the word "college" the words "and were practicing medicine and surgery in this State"; and by striking out the words "January the first one thousand eight hundred and eighty," and inserting the words "the seventh day of March one thousand eight hundred and eighty-five."

SEC. 3. That chapter thirty-four of the Code be amended by striking from Section 3125 the words "for confirmation," and by adding immediately after Section 3134 the following: "All persons who are now practicing medicine or surgery in this State shall, before the first day of January, 1890 personally appear before the Clerk of the Superior Court of the county where any such person resides or practices for registration, as herein provided; and any person who shall begin the practice of medicine or surgery in this State, after the passage of this act, shall likewise personally appear before the Clerk of the Superior Court of the county in which he resides or practices within thirty days after obtaining a license from the Board of Medical Examiners of the State, as now provided by law for such registration.

SEC. 4. Any person applying for registration as herein provided shall produce and exhibit before the Clerk of the Superior Court a license obtained from the Board of Medical Examiners aforesaid, or a diploma issued by a regular medical college prior to the seventh day of March, 1885, or make oath that he was practicing medicine or surgery in this State prior to said seventh day of March, 1885. And upon such exhibit or oath being made as aforesaid, the clerk shall register the date of registration, with the name and residence of such applicant, in a book to be kept for this purpose in his office, marked "Register of Physicians and Surgeons," and shall issue to him a certificate of such registration under the seal of the Superior Court of the county, upon the forms furnished him as hereinafter provided; for which the clerk shall be entitled to collect from said applicant a fee of twenty-five cents. The person obtaining said certificate shall be entitled to practice medicine or surgery, or both, in the county where the same was obtained, and in any other county in this State; but if he shall remove his residence to another county, he shall exhibit said certificate to the alerk of such other county and be registered, which registration shall be made by said clerk without fee or charge. Provided, that any one having obtained a temporary license, as provided in Section 3125 of the Code, shall not be entitled to register, but may practice during the time, such license shall remain in force.

Sec. 5. Any person who shall practice, or attempt to practice, medicine or surgery in this State, without first having registered and obtained the certificate, as aforesaid, shall be guilty of a misdemeanor, and upon conviction thereof shall be fined not less than twenty-five dollars nor more than one hundred dollars, or be imprisoned, at the discretion of the court, for each and every offence. Provided, that this act shall not apply to women pursuing the avocation of midwife, nor to reputable physicians or surgeons resident in a neighboring State coming into this State for consultation with a registered physician of this State.

Sec. 6. Any Clerk of the Superior Court who shall register or issue a certificate to any person in any other manner than that prescribed by this act, shall be guilty of a misdemeanor, and upon conviction thereof shall be fined not less than two hundred dollars and shall be removed from office.

Sec. 7. It shall be the duty of the Medical Society of the State of North Carolina to prescribe a proper form of certificate required by this act, and on or before the first day of July, 1889, to furnish the Clerk of the Superior Court of each county in the State blank forms thereof, and also one or more copies of this act. And it shall be the duty of said Clerk, immediately upon receipt of this act, to post a copy thereof in some conspicuous place in the court house of the county. Said Society shall likewise furnish to every physician in the State, whose address can be obtained, a copy of this act on or before said first day of July, 1889.

SEC 8. All laws and parts of laws in conflict with this act are hereby repealed.

SEC. 9. This act shall be in force from and after its ratification.

STATES MAY REGULATE MEDICAL PRACTICE.

An interesting decision has been rendered by the Supreme Court of the United States, supporting the right, claimed by the State Board of Health of West Virginia, to make rules for the regulation of the practice of medicine. The statutes of that State enact that every practitioner must qualify himself for legal practice by obtaining from the Board a certificate that he is a graduate of a reputable medical college, or has been ten years in the State engaged in practice, or that he has passed a satisfactory examination before the Board. A practitioner, named F. M. Dent, having been convicted of illegal practice, carried the case up to the State Court of Appeals, and thence to the United States Supreme Court, asserting that the law was unconstitutional, inasmuch as it deprived him of liberty and property without due process of law.

The decision of the Supreme Court says: "The power of the State to provide for the general welfare of its people authorizes it to prescribe all such regulations as may be necessary to secure the people against the consequences of ignorance and incapacity as well as of deception and fraud. One means to secure this end is the method adopted by the State of West Virginia. If the means adopted are appropriate to the calling or profession, and obtainable by reasonable study or application, no objection to their validity can be raised."

If it is the right of the State, under this weighty and memorable decision, to protect its citizens from pretenders and quacks, the duty so to protect them must be found by all diligent State Boards of Health to follow sharply thereafter. This duty to repress ignorant or fraudulent practice does not, of necessity, inhere in a Board of Health—in England, for example, it rests with the General Council of Medical Education and Registration—but it has been found expedient in this country to make the State Board the means for the correction of this form of abuse. In two States, at least—Illinois and California—a considerable improvement in medical practice has been accomplished, and we expect that West Virginia will presently report that her ranks have been purified from the worst of her quackish and ignorant impostors.—*Medical News.*

WE are in receipt of a copy of *The Trained Nurse*, a monthly magazine devoted to those who minister to the sick and suffering in hospital and home. It is published by the Lakeside Publishing Company, of Buffalo, N. Y., and its editor, Margaret Elliot Francis, was formerly Superintendent of the Buffalo Training School for Nurses. A sprightly Journal on subjects of growing importance.

CHARLESTON MEDICAL SCHOOL.—Our readers will have noticed in our advertising pages an error, heading an advertisement of the *Charleston Medical School,* using the word *College* for School. Our attention has been called to the error by Dr. W. Peyre Porcher, and we can only say that the proof of advertisements is read by the publishers, and we did not see the mistake until it was called to our attention. The blame lies at the doors of the publishers, who will make the proper correction in this issue.

VISITING LISTS.—P. Blakiston Son & Co's Visiting List is one of the old standard sort which has been approved by the profession for over thirty years.

The Southern Clinic Visiting List is a new candidate for favor, and seems to have been well received.

The Medical Bulletin Visiting List is also a convenient and well arranged pocket-book, by F. A. Davis, Philadelphia.

They all have their peculiar merits, and the purchaser could not go far wrong in getting either of them.

READING NOTICES.

Obstinate Constipation.—E. A. Scott, M.D., Columbus, Kan. says: "I have a patient, a man who has been constipated four years; has called upon all the physicians in the place; none had benefited him, never having an action upon the bowels oftener than six to eight days. He is now taking the Acid Mannate, small doses daily, keeping his bowels free. I have a lady patient who is suffering with a uterine trouble, and has periodical nervous sick headache (I think solely dependent upon the uterine troubles), she is also constipated. I have her upon the Acid Mannate; she, as well as myself, is pleased with its effect; her headaches are not so frequent or severe."

Cyclopedia of the Diseases of Children.—Messrs. J. B. Lippincott Company announce to the profession the publication of a "Cyclopedia of the Diseases of Children," medical and surgical by American, British and Canadian authors, edited by John M. Keating, M.D., in four imperial octavo volumes; to be sold by subscription only. The first volume will be issued early in April, and the subsequent volumes at short intervals. A thorough knowledge of the diseases of children is a matter of the greatest importance to most physicians, and as this is the only work of the kind that has been published in English, it will be invaluable as a text-book and work of reference for the busy practitioner.

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NORTH CAROLINA MEDICAL JOURNAL.

THOMAS F. WOOD, M. D.,
GEO. GILLETT THOMAS, M. D., } **Editors.**

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ORIGINAL COMMUNICATIONS.

THE PUBLIC WATER SUPPLY OF TOWNS AND CITIES IN NORTH CAROLINA.

By H. T. Bahnson, M.D., Salem, N. C.

For much of the matter of the following pages the writer does not desire to claim originality. It is largely a collation of the most pertinent facts established by the researches of eminent sanitary scientists.

The necessity of a wholesome water supply for our growing towns is rapidly increasing in importance, and this paper is written with a view to point out imperfections, if any exist, in such supplies as are already instituted, and to furnish data which may serve to prevent similar and perhaps graver errors in future undertakings of this kind.

If we study the history of modern towns we will be struck by the fact that a public water supply has generally followed a more or less destructive conflagration. The resulting loss of property has induced property-owners to take precautions against such calamities in the future. The average man will freely tax himself to insure the safety of his house and worldly goods, while he entrusts the lives and health of himself and family to the mercy of Providence. If Providence will preserve from disease and death, why will He not protect from fire? Which is the worse misfortune, to have a house burned down, or to see wife and children die of a preventable disease?

Probably these questions have not been asked; at all events, the prime object of a water supply seems to be the protection of property from fire. A town pays out of its revenues a rental upon the fire hydrants and the householder stints his family in the use of water, with an anxious eye to his water-tax.

The old heathen did better, as is shown by the remains of their magnificent aqueducts and public fountains and baths. Their water was used for cleanliness and the preservation of health—not to gorge the insatiable maw of that modern municipal toy, the steam fire-engine. Perhaps they lost more buildings, but they saved more lives.

Greek and Roman civilization looked to the health and bodily development of the citizen. Their religion consisted of the deification of heroes and the apotheosis of superior physical attributes. In this religion ablutions for the purification and invigoration of the body of the worshippers bore a prominent part. In the revolt against Pagan rites, which was brought about by Christianity, water was put under the ban because of the importance attaching to it in the heathen ceremonial. Self-abnegation and mortifying of the flesh took the place of personal cleanliness and attention to physical culture. Personal nastiness became the stepping-stone to canonization, and the odor of sanctity was no figure of speech. To the mind of such devotees disease was of Divine origin, and plagues and pestilences were submitted to with resignation. An effort to prevent such visitations would have been regarded sacrilegious.

Out of this quagmire of superstition and fanatical perversion of Christian tenets the civilized world only gradually emerged after the lapse of centuries. Dogmatism and cant have been relegated to the limbo of the Dark Ages, where they originated, and "pure religion and undefiled" again demands a clean body as the abode of a pure heart. Science, the handmaid of religion, has displaced empiricism in medicine, and inaugurated the warfare upon filth as the cause of disease, which is the crowning glory of this age of progress and enlightenment. Most diseases can be prevented, some alleviated, and only a few cured. The prevention, therefore, rather than the cure of disease, is the goal of modern medical ambition.

The laws of life and health are daily becoming more clearly known and easier to comprehend, and it is the duty of the physician and sanitarian to bring them to the knowledge of the authorities and the public. But alas! the traditions and the prejudices of centuries are hard to eradicate, and although the ear of this generation can be reached by the propaganda of sanitation, the truths of its teaching usually require severe lessons to impress them upon the hearts and lives of a people. In spite of encouragements from wilful ignorance, or worse still, fatalistic indifference, modern sanitary science preaches and fights its crusade for the preservation of health and the prolonging of life, with confidence inspired by a righteous cause and the assurance of a final victory.

Water, from the earliest times, has been regarded as the symbol of purity. The sparkling dew-drop, the refreshing rain, the bubbling spring, the dancing rivulet, the pellucid stream or lake, the deep, cold well, the crystal snow, the glass-like ice, to the natural eye present the embodiment of purity and healthfulness. It may be transparent and sparkling, grateful and refreshing, and yet, this apparently pure, health-giving water has carried in ages past, and is to-day carrying, disease and death to myriads of the human race. Modern science, with ruthless hands, tears away the veil which hides from our unaided eye the workings of nature's laboratory and dispels our fondest illusions. It teaches us that "the moss-covered bucket" is a euphemism for malaria-breeding algæ, and "the life-giving element" we so eagerly quaff may be foul with pollution from stable and privy and swarming with death-dealing microbes.

Absolutely pure water does not exist in nature. Even the vapor in the atmosphere which sourrounds our earth is laden with impurities and rich in minute organic life. The germs of the latter, owing to their great volatility, are carried by the wind to high altitudes and long distances; and, entangled in the crystals of snow, or gathered by the globules of rain, are precipitated upon the earth's surface. The red snow of Greenland, the wonder of our school days' geography, derives its color from microscopic vegetable spores, and the so-called "mountain fever" has been traced to a similar origin, viz: vegetable spores from the melting snow, carried into the springs and other sources of water supply.

But it is upon the surface of the earth, and the few feet of loose soil which compose its crust, that we find the principal sources of water-pollution. Dead and decaying animal and vegetable matter give life and sustenance to innumerable minute organisms, which we call microbes. Some of these are poisonous in their influence, while others serve as scavengers by promoting fermentation and putrefaction, resolving organic matter into its chemical constituents and fitting it to be absorbed by the radicles of growing vegetation. Saturated with decaying organic matter and the products of its decomposition, the water not needed for vegetable growth either evaporates from the earth's surface or passes into an adjoining stream, or percolates into the deeper recesses of the earth, until it is arrested by some impermeable stratum, from the edge of (or a seam in) which it bursts forth again in the shape of a spring. During its course through the deeper layers of the earth, it is constantly undergoing chemical and biological influences. The products of decomposition are thereby further resolved or eliminated by filtration, and the water appears again at the surface of the earth, nearly or altogether free from organic matter. Its purity in this particular depends, of course, upon the depth and character of the filtering material through which it has percolated. During its passage it dissolves and carries with it more or less, according to solubility, of the earthy and mineral matters which it encounters. Springs not being always accessible or of sufficient capacity, it becomes necessary to utilize the water from running streams and lakes or sink wells to the water-bearing stratum.

A spring or well deriving its water from a wooded or grass-covered area, protected from surface drainage and not holding in solution an excess of mineral or earthy salts, affords a healthful and perfectly satisfactory water supply. Except in periods of great drought, the small amount of its organic and mineral ingredients would be no disadvantage, but only serve to make the water refreshing and palatable. But these desirable sources of water supply can only exist in uninhabited, or at most, sparsely settled sections of country.

Surface drainage from uncultivated ground, especially if this be of a marshy character, contains a large amount of vegetable matter, from the decomposition of which, under certain conditions of soil and temperature, is developed the malarial poison. It is positively demonstrated that this poison is eliminated from water by filtration through the soil, and no malarial disease can be traced to a well or spring untainted by a direct inflow from the surface. Nature's process may be successfully imitated, and artificial filtration, properly conducted, affords protection against malarial poison in drinking water.

As a country is settled, however, we have other and more terrible foes to encounter in the effort to maintain the wholesomeness of our water supply. The rotting garbage which litters our streets and yards, laundry and kitchen slops and waste, the pig-sty and barnyard, and above all, the privy, furnish pabulum for the development of the germs of what are known as zymotic and filth diseases. Their germs once developed, permeate the soil, and it is only a question of time when, the earth's filtering power being incapable of arresting them, they invade our sources of water supply, and produce sickness and death. Amongst these diseases are the various forms of diarrhœa and dysentery.

Common diarrhœa, as distinguished from its specific forms, e. g., cholera, occurs generally whenever drinking water is sufficiently laden with impurities to cause irritation of the alimentary mucous tract. In periods of drought and consequent supersaturation with impurities of the scanty water supply, diarrhœa and dysentery are especially prevalent and attended with great mortality amongst children and the aged and infirm. That in most cases diarrhœas, sporadic and epidemic, are due to a specific poison, acting otherwise than as a simple irritant, is settled beyond a doubt; but this poisonous principle, almost certainly a germ, has not yet been definitely determined. In many cases of diarrhœa, occurring from the use of water, the pollution of the latter has been so great that its excess of organic matter could be determined by microscopical and chemical analysis, and quite frequently its odor and taste sufficed to condemn it as unfit for use.

Cholera is a specific diarrhœa. Originating along the water courses in India, where it is always endemic, its germs are carried by travel and commerce to all parts of the world. We know that it is especially transmissible by water, and the latter may be contaminated either directly by choleraic exereta or by the absorption of the exceedingly volatile germs from the atmosphere. So rapid is their dissemination that neither natural nor artificial filtration can be depended upon during the prevalence of this virulent disease. In an epidemic of cholera no water should be drunk which has not been thoroughly boiled, passed through a reliable filter and kept in an air-tight vessel. Boiling destroys the germs of the cholera by coagulating the albuminoids. Filtration deprives it of these coagulated albuminoids, and restores its sapidity by replacing the air expelled in boiling. If it were possible to adopt generally the same precautions at all times, the cases of sickness and death caused by unwholesome water would be reduced to a minimum. Under the influence of a cholera scare no expense, no sacrifice of comfort or convenience is thought too great to be rendered as a free-will offering at the shrine of this awe-inspiring Moloch. But cholera rarely visits our favored shores, and by a rigorous enforcement of quarantine regulations, we can entirely escape its ravages.

We read with horror of the desolation wrought by it a year ago in Italy and Spain; of cities decimated and abandoned by their terror-stricken inhabitants; of villages and whole districts depopulated, the living unable to care for the sick or bury the dead. We note with indignant amazement the squalor and filth, the unsanitary conditions which aided the dissemination and augmented the fatality of the pestilence, and, with Pharisaical complacency, we thank God that we are not as other men are.

We deliberately close our eyes to the fact that our country is constantly ravaged by diseases even more fatal, and quite as much due to filth as is cholera for their origin and dissemination.

Foremost amongst these are diphtheria and typhoid fever. Both are produced by specific organic principles. Rotting garbage affords development to the germs of diphtheria, while the poison of typhoid fever has its origin in decomposing human excrement. The former is frequently, and the latter is almost invariably, conveyed into the system by drinking water. The deaths in this country every year from these two diseases outnumber by many times the severest epidemics of cholera or yellow fever. The latter, confined to a limited area, arrest the attention, while the former, on account of their widespread distribution, are regarded with equanimity and submitted to as a matter of course. And yet they are more easily prevented by us than yellow fever or cholera. The latter diseases are of foreign importation, and a laxity of quarantine, for which we, as individuals or communities, are not responsible, may bring one or both of them upon us. Diphtheria and typhoid fever are home productions—the legitimate fruits of our own filth. The parent who throws his child into the fire, the husband who shoots his wife, the man who slays his neighbor, is justly condemned as a murderer. In what respect does he differ from him who breeds a pestilence that kills his wife and child and neighbor?

It is impossible to evade or contravene human law, but the laws of nature are immutable and implacable; effect follows cause—crime brings punishment. The penalty may be delayed, but it is none the less certain. The foul drain, the reeking offal from kitchen and pig-sty, invite the waiting germ to breed the pestilence that throttles and suffocates our darling child, whose agonizing sufferings we are powerless to allay—whose piteous appeals for the help we cannot afford rend our bleeding hearts. The offending filth may be in our neighbor's premises or on the public highway; this but shifts the responsibility without mitigating the crime or giving immunity from its penalty.

Diphtheria, as a distinct disease, was first described in 1835 as originating in the slums of Paris. Since that time it has been recognized over the whole civilized world, and is justly regarded as the most fatal pestilence of modern times. In the city of Brooklyn the mortality during the past twelve months was nearly 1,000, and in other parts of the country it claims its victims in like, or even greater, proportion.

Its transmission by water pollution is abundantly attested. There is no necessity to go outside of the State for evidence. In Winston and Salem not less than thirty sporadic cases have occurred during the past two years. All of these were in families using well-water. The surroundings were most favorable for its development—garbage plentiful and pig-sties numerous. In the houses of neighbors using water from the public supply not one case occurred. It frequently happens that diphtheria is prevalent on one ridge or water shed. In one case, under my observation, the disease in the course of years travelled about twenty miles along one ridge, taking the lives of over 100 children, and, except by contagion, not affecting a single person on parallel ridges. The dreadful epidemics, ten to fifteen years ago, in Company Shops, Charlotte, Newbern and other places in the State, can only be accounted for by the general pollution of the wells.

Sanitary science teaches us that the virulence of diphtheria can be mitigated and its germs prevented from propagation by cleanliness in our premises and surroundings. In the city of Pullman, where sanitation is enforced by law, the disease is unknown. We know further, that it is highly contagious, spreading rapidly from the person and surroundings of the sick, and particularly from the body of the dead. Yet the dead body of the little victim is often left exposed to be gazed at by friends and kissed by relatives, the bed and furniture of the sick-room placed in the yard to poison the atmosphere, and the sputa and dejecta of the patient thrown upon the ground to pollute the surrounding wells. Isolation of the sick, thorough disinfection and prompt sealing up of the dead body will limit the contagion, and yet there is not a law on our statute books to enforce these simple and necessary regulations. Probably more than 1,000 children in North Carolina are yearly sacrificed to this preventable disease by our indifference and stupidity. Shall the blood of these slaughtered innocents cry out from the ground in vain?

Typhoid fever is not a contagious disease like diphtheria. Its poison does not spread from the person and surroundings of the sick, and if several members of a family or community are stricken down by this disease, they do not contract it directly from one another. The poisonous germs are found only in the evacuations from the bowels of the sick. These, thrown upon the ground, or cast into the privy, multiply with amazing rapidity; and, washed by the rain into a stream, or percolating through the soil into a well or other source of water supply, spread the disease amongst those using the water. Water so polluted gives no evidence of its fatal properties. Neither by chemical nor by biological analysis can the presence of typhoid fever germs be detected with certainty. Natural filtration does not exclude them from a well, and it is unreasonable to hope that artificial filtration can do more. They resist the chemical and biological influences to which they are subjected in passing through the soil, are unaffected by frost, and retain their virulence indefinitely. The dejecta of a single patient, during the winter of

1884–85, were thrown out upon the frozen ground, and by the thaw in April were carried into the reservoir which supplied water to the village of Plymouth, Pennsylvania. In less than one month over 700, and in less than three months 1,200 people using the water were stricken down with the disease.

Typhoid fever respects neither age nor sex, and regards previous condition only in so far that the negro race is perhaps less liable than the white to its ravages. It flourishes alike in country and town. From the mountain to the seashore, wherever human excrement, directly or indirectly, finds access to drinking water, typhoid fever prevails. Exemption can be secured only by having passed through the disease—a second attack is very rarely observed. A neighborhood or community may for a long time escape a visitation, but sooner or later its time will come, unless the proper precautions are taken. An absentee returning home, a transient guest, a child from school, may at any time bring the disease from an infected locality. In these days of rapid and easy travel such contingencies are of every-day occurrence.

In the absence of a registration law, we can only estimate the mortality from typhoid fever in North Carolina by a comparison with other States which have such registration. Giving ourselves the benefit of every advantage, we are forced to conclude that not less than 500 of our citizens annually die from this disease. In the United States typhoid fever kills more than 30,000 every year, and we suffer our share of the mortality. For each death we may count at least eight sick on an average eight weeks. The great majority of victims to typhoid fever are in beginning maturity—the most valuable and productive period of human life. Such a life is certainly worth $1,000. Eight sick for each death means 4,000 sick eight weeks each year, or an average of 600 sick every day in the year. A low estimate of the loss of productiveness and the general and incidental expenses of sickness would be $1.00 per day for each patient.

Let us summarize:

Five hundred deaths at $1,000	$500,000
Six hundred dollars per day for sickness, 365 days	219,000
And we have a total of	$719,000

—a sum equal to the entire revenues of the State, ruthlessly squandered and literally wiped out of existence—taken from the resources of our State and paid for the questionable privilege of mixing our own ordure with our drinking water.

These figures are appalling and may seem incredible, but let my reader examine his own family history and visit the neighboring graveyards, and then make his own calculations. When he has accomplished this, I beg him to compute the anxiety, the sorrow and desolation—a task for which I confess myself entirely inadequate.

Other sources of water pollution deserve more than the casual mention to which I limit myself. The blood and offal from slaughter-houses, the waste from manufacturing establishments, the refuse from saw and planing mills should, for obvious reasons, not be allowed to rot upon the ground and be carried by storm-water into our streams. Sewage from paper-mills and tan-yards is especially objectionable, and the subsoil drainage from cemeteries is literally the draught of death.

Writers upon cholera in India ascribe its origin and virulence largely to the fact that the washing of clothes is carried on in the water which is used for drinking. How often do we see the washing of the family done at the well or on the bank of the spring? Need we wonder if such water is sometimes unwholesome?

The importance, nay, the vital necessity, for a pure water supply for our people; whether they are scattered over the country or aggregated in towns, must be conceded. As towns increase in population the difficulty of procuring a wholesome water supply and the dangers of its pollution are correspondingly augmented.

It is asserted that a barrel of kerosene, poured into a hole ten feet in the ground, will contaminate all the wells in a radius of a quarter of a mile. Sooner or later, therefore, the poisonous products of decomposing filth must find their way into a well in proximity to a habitation and its out houses. As population increases in a given area, so does the volume of garbage and filth and excrement. In addition to this, vegetation, which would otherwise assist in its disposal, decreases in inverse ratio to density of population. The bare ground of streets and yards becomes supersaturated with rotting refuse, which percolates through the subsoil into the wells. The germs of disease may not be in this pitcherfull or that, but they will surely find us some day if we continue to use the water which contains them. A water-bed or basin cannot safely be used for concurrent purposes of water supply and the reception of offal. Sickness and death will follow as surely as the night succeeds the day. A new source of supply, therefore, must be sought, and this is the question that confronts every growing town.

It is fondly imagined by many that the purity of water can be determined by chemical or biological analysis. While water in which gross impurities are detected by either process is justly condemned as unfit for use, the reverse of this axiom by no means follows. There are many sources of error and I will mention a few :

1st. Water analyzed to day and found unobjectionable may easily become foul with pollution to-morrow. It is obviously impossible to analyze water every time we want a drink.

2d. Water purposely polluted with cholera and typhoid fever poison has been pronounced of good quality by chemical tests.

3d. Until we can recognize the germs of the various filth diseases, the biological analysis of water can give only negative results. There is every reason to hope that success will crown the painstaking efforts now being made to isolate and determine these poisonous germs; but even then their exclusion from our water supply must continue to be our only safeguard.

In the selection of a water supply we should not be contented with an examination of the contour of the water-shed. It must be remembered that, in most sections of our State, the crust of the earth is of very recent formation—the result of denudation and atmospheric action upon the underlying rocks. These may, and, indeed, generally do, dip at a considerable angle to the surface. Surface drainage and subsoil drainage, therefore, are often in different or even opposite directions, and our calculations as to the area which supplies this or that water basin are frequently at fault. It must be evident, then, that we should have an accurate knowledge of the dip and strike of the water-bearing stratum. Nowhere could the services of a competent geologist or engineer be more profitably utilized than in the selection of a site for a water supply.

North Carolina is a well watered State, and our surface is not yet settled so thickly that a suitable area for a wholesome water supply cannot be found, in most cases, near a town. Such localities should be secured without delay and zealously guarded against contamination. It needs no argument to convince a thinking man that this course is true economy. What ought to be done should, in all cases, be done at once. It is we who are interested in this matter, now in our own time and generation; for what does it avail us that our town is supplied with pure water ten years hence, if at that time it be remarked of us: "Ah, yes, I remember him well; he died of typhoid fever eight years ago." And it is an easy matter to so arrange the financial burden that part of it shall fall upon those who will hereafter participate in its benefits.

The purity of the water should be the first consideration. We must go to nature for this, and take advantage of her lavish generosity in this direction. In some cases springs may afford a sufficient supply, in others a large stream, in still others a neighboring lake. These failing, it may be there is an impervious stratum below our polluted water-shed, piercing which, we find an abundance of uncontaminated water. Such water is utilized in Brooklyn and Memphis, and is the hope of Newbern and Goldsboro in our own State.

Whatever the source, it cannot be too strongly emphasized that it must be pure and must be kept pure. The drainage area of the supply must be kept under the closest supervision, and the health authorities empowered to protect the many against the careless or wanton encroachments of the few.

Next in importance to purity is abundance of water supply. It has been well said that the true test of civilization is the consumption of water for domestic purposes. Although custom sanctions the practice, it is manifestly unwise, as well as unjust, to levy a tax on water for domestic use, and, without money and without price to the owner, pour a hundred or a thousand times as much into a burning building. Such a tax bears unequally upon the people, and is, in the case of the very poor, prohibitory. The latter, if possible, avoid using the taxed water and resort to suspicious, if not certainly polluted, private sources of supply. A revolution of the present system can hardly be brought about immediately, but such a reduction of charges as will enable even the poorest to make ample use of pure, wholesome water is a sanitary necessity and deserves the earnest consideration of town authorities everywhere. Sickness is impoverishment, health is wealth; and not only is the good name of a town injured, but the lives and health of the better classes are imperilled if filth diseases prevail among the poor.

The introduction of a wholesome and abundant water supply into town is simply a question of money—not what it costs to obtain, but what it costs to do without. The inhabitants of a town must be shortsighted indeed, if they hesitate at any outlay which will prevent disease, increase their health and longevity, correspondingly augment their productive activity and lessen their death-rate.

Vienna, in one year, decreased her mortality by typhoid fever from 341 to 11 per 100,000 by introducing spring-water in place of that drawn from the Danube river. Baltimore, Brooklyn, Memphis and other American cities have done equally well. How long would it take such a saving of life and health to balance the cost of the most expensive water-works?

Bad water affords a valid pretext for the use of alcoholic liquors to prevent its poisonous effects. If our prohibition friends deprive the poor man of his tipple, they should certainly aid in providing something more wholesome to supply its place. Apart from the encouragement and quasi justification for the use of intoxicating beverages which unwholesome water furnishes, it is an established fact that polluted water causes more deaths, more sickness, more sorrow, misery and destitution than all the stills in the State.

Sanitation prescribes temperance in all things, and positive avoidance of morbific agencies. Compared to it prohibition is a rush-light to the sun, an episode, a side-show to a great caravan. Sanitation once established as a governing principle in State and family, prohibition would naturally become a question of expediency to an elevated and enlightened public sentiment.

As has been mentioned above, the introduction of a public water supply has generally been with a view to protection from fire. Indeed, until within the past forty years, a connection between drinking-water and specific forms of disease was, at best, only suspected. Since sanitary science has positively demonstrated this causative relation various expedients have been adopted in a futile effort to correct and remedy the impurities which are known to exist in established water supplies.

A brief mention of these expedients may prove interesting. The principal ones are sedimentation, æration, chemical precipitations and various modifications and combinations of these processes. All of these are imitations of natural processes, and, of necessity, as imitations, fall short of the original.

Sedimentation takes place naturally in lakes and streams, and, on a smaller scale, in wells and springs. The particles of earthy matter, from their own weight, subside to the bottom, and along with them more or less of organic impurities. Storage reservoirs possess this advantage, and necessarily add much to the appearance and healthfulness of the water, their good effect being proportionate to their capacity and the length of time water is exposed to their influence. In seasons of unusual turbidity no less than ten drops of earthy matter and one half ton of decomposing organic substances are thus eliminated from the 20,000,000 gallons of lake water which constitute the daily supply of Cleveland, Ohio. That the elimination of such a mass of putrescent filth is of the greatest advantage must be self-evident. Nevertheless, sedimentation is but a poor safeguard against disease. The infected water which prostrated 1,200 of the 8,000 inhabitants of Plymouth, Pennsylvania, and killed 130, passed through three storage reservoirs to accomplish its deadly mission. Sedimentation is limited in its value and adaptability, and care must be taken to prevent stagnation in storage reservoirs.

Every one has noticed the greenish scum which generally covers a stagnant pond. If we follow the effluent of such a pond we notice that very speedily the water becomes clear and sparkling, especially if there is enough descent to cause ripples or falls in the stream. This process has been successfully imitated by forced æration in some storage reservoirs, notably at Brooklyn, New York, where stagnation produced such a scum, and the filthy water was restored to a potable condition. The decomposition and destruction of the vegetable matter composing the scum was effected by the oxygen in the air forced through it.

Chemical precipitation by means of alum, various salts of iron, lime, etc., is a useful adjuvant to sedimentation and filtration. It is not necessary to inquire whether the action of these agents is strictly chemical or in part mechanical. They undoubtedly hasten the subsidence of the grosser organic and inorganic impurities suspended in water, but cannot be depended upon to eliminate the specific germs of disease. These are so tenacious of their vitality that their destruction could be accomplished only by an amount of purifying agents, which would be of itself dangerous to human life.

Artificial filtration consists of the passage of water through beds of gravel, charcoal, coke or other porous substances. Theoretically, it is the most promising means for purifying water, and the result of the process, if properly conducted, is most gratifying to the eye and taste of the consumer; a perfectly limpid, appetizing water. The defect in artificial filtration is that it undertakes a thousand or even a million fold as much as nature. It has neither the time nor the surface to effect percolation after nature's method. More water passes through a filtering bed under strong pressure in an hour than nature purifies, on the same area, in one or more years. Some filters are arranged for a reversal of current and a scouring of the filtering material, and it is claimed that they are thus thoroughly cleansed. But who can confidently assert that such reversed current and even scouring will remove all the minute impurities which have been forced against the surface or entangled in the interstices of the filtering material? It is not denied that some organic matter remains after filtration, and it is only a natural inference that, owing to their minute size and great vitality, the germs of disease shall longest and most successfully resist elimination. The guarantee of a patent filtering company is worthless from a scientific sanitary standpoint. A crucial test would be the prolonged use, by themselves and families, of water impregnated with typhoid and diphtheritic germs, and passed through their filter. They ought to have at least as much faith in their assertions as is shown by the veterinarian in England, who declares that hydrophobia exists only in the imagination of its victims, and, up to last accounts, had allowed himself to be bitten by 147 rabid dogs.

Filtration will probably remove malarial poison and suffice to purify for drinking purposes the water from lakes and rivers. If these are of large size we might reasonably hope that if pollution existed it would be so diluted in a vast body of water as to be innocuous. And yet Chicago, which derives its water supply from Lake Michigan, through a tunnel opening two miles from the shore, is about to extend the tunnel three miles further out to insure exemption from pollution.

The sum of our knowledge on the subject of artificial purification of water is thus tersely expressed by the English Commissioners: "Of all the processes which have been proposed for the purification of water polluted by excrementitious matters, there is not one which is sufficiently effective to warrant the use, for dietetic purposes, of water which has been so contaminated."

We may add: Water to which sewage has access, directly or indirectly, by surface or subsoil drainage, should, from that fact alone, be excluded from all consideration as a possible source of water supply for drinking purposes.

The sanitary requirements of a public water supply are only two in number, viz:

1st. *Purity, i. e.*, absolute freedom from apparent, and possibly both present and future contamination and pollution. This necessitates undisputed control and watchful supervision of the watershed and the surface area supplying it.

2d. *Quantity, i. e.*, water in sufficient abundance and cheap enough to be used freely for domestic purposes by all classes. This requirement can only be met when the water-works are owned by the town. Such ownership would result in the closing of private wells and springs, which are always liable to pollution.

Let us summarize the reports of the various public water supplies in the State, as furnished me by friendly correspondents, and see how these requirements are fulfilled.

Asheville.—Water taken from Swannanoa river, four miles above the city. Stream is large, rising in the Black Mountains and flowing through a sparsely settled and cultivated valley. Water occasionally turbid from rains. Filtered by Hyatt method, a combination of filtration with forced æration and chemical sedimentation. Supply abundant. Works owned by the city. Meter rates 25 cents per 1,000 gallons. Average cost per year for a family of six persons $10. Not yet in general use by poorer classes. Water introduced only a year ago, but since its introduction a marked decrease of typhoid fever and enteric diseases is noted.

Charlotte.—Water-works established 1881–82. Owned by a company. Source of supply on outskirts of town from several small streams and ponds; also surface water. Storage reservoirs of 16,000,000 gallons capacity. Water often muddy and liable to pollution, as company has control of only a small area of watershed. Average consumption, 265,000 gallons per day—a little over one-fourth capacity. Water rates 50 cents per 1,000 gallons. Average cost per year for a family of six persons $20. Not in general use by poorer classes, but increased healthfulness noticed among consumers.

Concord.—Supply taken from a remarkably pure spring near the centre of town. No apparent connection with immediately surrounding area. Capacity about 30,000 gallons per day. Works owned by private individual. Water not in general use.

Durham.—Works owned by a company Water introduced two years ago. Supply derived from several springs six miles north of town, whose waters are impounded and collected into a reservoir. Surrounding country hilly and rocky, with sandy surface and clay subsoil. No habitations near. Reservoir closely fenced and whole works guarded. Water, after heavy rains, slightly turbid from clayey sediment. Capacity four times greater is demanded by present size of town. Water is pretty generally used—at least by better classes. Meter rates 40 cents per 1,000 gallons. Average cost per year for family of six persons $16.

Fayetteville.—Present system of water-works introduced in 1824. Belongs to town. Supply is from springs just outside corporate limits. Water collected in a brick reservoir and conveyed through bored logs, connected by iron couplings. Capacity about 85,000 gallons per day. In limited use. Rates ———.

Goldsboro.—No public water supply. Contract entered into by city with a Northern company to supply 2,000,000 gallons per day at a price for family consumption of $5.50 per faucet, making average cost per year for a family of six persons at least $15. Supply to be taken, if possible, from driven wells sunk below underlying marl stratum. This would probably be unobjectionable, but if water is taken from Little river its wholesomeness is questionable.

Greensboro.—Works established during the past year and belong to a company. Supply taken from springs one and a half miles from centre of town, and beyond a creek, so as to be free from town drainage. Area supplying springs belongs to a private individual, with no dwellings, and mostly covered with forest. Supply limited and not yet much used. Water often muddy, ascribed to newness of storage reservoir, but as the company proposes putting in a filter, there is probably surface drainage. Meter rates not to exceed 25 cents per 1,000 gallons. Average cost per year for a family of six persons $10.

Raleigh.—Works owned by a company. Supply taken from Walnut Creek, above any possible inflow of city drainage. Area of water-shed extensive, embracing both cultivated and wood-land, and including part of the village of Carey. Special legislation has been obtained for the protection of stream and water-shed, but its great extent renders proper supervision difficult, if not impossible. Capacity ample for present needs. Direct service from pumps, with stand-pipe pressure for fire protection. Water filtered by

Hyatt method. Storage reservoir for filtered water. Meter rates 40 cents per 1,000 gallons. Average cost per year for family of six persons $16.

Salem.—Water-works first established over 100 years ago. Supply taken from springs of limited capacity and distributed in cisterns throughout the village? Superseded by present systems in 1878. Works owned by a company. Supply derived from shallow wells alongside the course of a stream which drains a section of Winston and Salem. Water always clear and tests have failed to detect connection with stream or surface drainage. Storage reservoir for fire protection, direct service for ordinary consumption. Rates 50 cents per 1,000 gallons. Average cost per year for family of six persons $20. Absence of zymotic diseases noted among consumers.

Salisbury.—Works owned by a company. Supply taken from Cane Creek two miles southeast of town away from town drainage. Area supplying creek largely cultivated ground. Water muddy and not used for drinking purposes.

Wilmington.—Works owned by a company. Water taken from North East river at its junction with the Cape Fear. River 450 feet wide at site of pumping station. Subject to tidal influences. Located one mile or less above docks, shipping and sewers, and receives drainage from several cemeteries, slaughter-houses and a large part of the city, through a creek emptying into North East river one-quarter of a mile above works. Rice fields on opposite side of river, and large guano works one mile above on Cape Fear river. Water discolored from swamps (cypress water), as is the case with nearly all river and pond water in Eastern Carolina. Supply unlimited. In only limited use for drinking purposes, though doubtless far more wholesome than the water in private wells. Meter rates 20 cents per 1,000 gallons. Average cost per year for family of six persons $10.

Winston.—Works owned by a company. Supply derived from shallow wells alongside of a stream draining mostly cultivated lands and old fields and receiving surface water from the suburbs of Winston. A dam across the stream and above the wells arrests its flow and serves for pumping purposes. Water never muddy and tests have failed to show any connection with adjoining stream. Supply more than equal to demand. Water not in general use by poorer classes. Absence of zymotic diseases noted amongst consumers. Meter rates 50 cents per 1,000 gallons. Average cost per year for family of six persons $20.

As a model for comparison, I wish to describe the water supply of the Western North Carolina Insane Asylum. The water is taken from an impounded mountain stream six miles from the Asylum. The entire surface area of water-shed, which is covered with forest, is owned and guarded by the Asylum authorities. Supply is ample for the present needs, and can be nearly doubled by erecting storage tanks in the upper part of the building. Service is direct with a constant flow, and the water is free to the consumers.

Approaching nearest to the model set by the Western North Carolina Insane Asylum we must place the Asheville water supply. Until the Valley of the Swannanoa is well settled the risk of pollution may be excluded, and the naturally pure water has the advantage of æration afforded by the swift mountain stream. Durham and Greensboro* are next in the list, their water-sheds only requiring watchful supervision to maintain their integrity. They are at present virtually under control of the water companies and need only to become actually their property to fulfill the first requirement demanded by sanitation. Raleigh's supply depends for its safety upon the permanency of the lively appreciation of danger at present evinced by its health authorities.

Leaving Concord and Fayetteville out of consideration, because their supply is too limited to be generally utilized, we are compelled to place Winston, Salem, Salisbury, Charlotte and Wilmington in the doubtful list of water supplies, their risk from pollution and their inability to avert the danger increasing in the order in which they are mentioned. Without legislation they are all powerless to protect their water supply, while the last mentioned is besides at the mercy of influences beyond human control.

How well the second requirement is met I leave my readers to decide. How many poor families in our North Carolina towns can afford to pay a yearly water tax of $15 or $20, especially when it is considered that a plumber's bill of at least equal amount must precede the introduction of water to their premises?

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*Since writing the above I am informed that the impounding reservoir of the Greensboro water-works is part of an old mill-pond, from the main body of which and the stream supplying it it is separated only by a bank of muck and earth taken out for the purpose of deepening it. This reservoir is liable to overflow of back-water, and is partly supplied by seapage from both pond and stream. Such being the case, Greensboro must be placed far down on the list of doubtful or dangerous water supplies.

I would not detract an iota from the praise justly merited by the public spirited citizens who, realizing the necessity of their towns, and impatient of the apathy of municipal authorities and the general population, have invested their private means in the laudable undertaking to provide better protection from fire and superior water facilities. It is only just that these public benefactors should reap some reward besides the approval of a good conscience, and no man can grudge them the small dividends that are usually returned by such investments.

I can only repeat that, to enable all classes to make sanitary use of our public water supplies, the cost must be very much cheapened from the present figures, and the only way to accomplish this result, without injury and loss to individuals, is to vest the ownership of public water-works in the town or city supplied by them.

If I have been followed, it must be evident that individual efforts to preserve the purity of a water supply will not avail. Your well or spring may be polluted by your neighbor's privy or filthy premises, in spite of the strictest attention to cleanliness on your own domain. We have, to be sure, laws for the abatement of nuisances, and anything prejudicial to health may be complained of, and if proved a nuisance, removed by process of law. The history of the expensive and prolonged litigations for the draining of mill-ponds in various localities in the State may be cited as instances of the cumbersome and inefficient action of the law. In practice the law has become a prolific field for quarrels and feuds and an effective means to exhibit spite and ill-will. It is often more honored in the breach than in the observance, and many a man risks the lives and health of himself and family rather than complain of the filthy habits and practices of his neighbors.

Whether sanitary laws are disobeyed through ignorance, carelessness or perversity, by yourself or your neighbor, punishment comes, and is as apt to strike the innocent as the guilty. Indeed, in many instances it is the innocent especially who suffer, for it seems that there is to some extent an immunity from filth diseases in individuals and families who do not know what it is to be clean. They become, as it were, acclimated to their surroundings and thrive in a filth which would sicken and kill more sensitive and highly organized natures. To these they become producers and purveyors of diseases from which they may be themselves exempt.

Communities demand protection from such influences, and appoint sanitary inspectors and boards of health, but by limiting their expenditures and crippling their executive powers by restrictive legislation the object and aim of their existence is thwarted, if not entirely abrogated.

For the successful conduct of any business a knowledge of his duty, executive ability and responsibility are required of an employee. How much more are these necessary in the maintenance of life and health—the business of mankind in this world next in importance to the salvation of the soul! Yet how often do we see in a community a health officer appointed, not for his knowledge and fitness for the duty, but because his services, such as they are, can be obtained for the least money! Some communities, indeed, have no health officer, but entrust their sanitation to the mercy of a sanitary policeman, usually an ignorant hireling, whose principal recommendation is perhaps his known disregard for the nuisance he is expected to abate.

That we may know what we are about, we should first ascertain the facts as to the existence and prevalence of disease in our State. While it may prove difficult, perhaps impossible, to carry out in the rural districts, a system of death records and burial certificates should be enforced in every incorporated community, and the presence of contagious and infectious disease immediately reported to the constituted authorities. The physician who attends a case of such disease should be held responsible for its isolation and the disinfection of the excreta and surroundings of the patient. In this way only can our atmosphere and soil and water be kept free from the germs which cause and propagate disease. The health officer must prevent the accumulation and superintend the removal of garbage and filth, including the contents of closets and cess-pools, in private as well as public premises. To accomplish this he must be clothed with indisputable authority, and penalties should attach to those who obstruct him in his work, as well as to his failure to carry out these essential sanitary regulations. Returns at stated intervals should be made to the State Board of Health, one of whose functions it should be to direct and control the enforcement of the sanitary laws and hold to personal accountability its transgressors. As at present constituted the State Board of Health is simply an advisory body, with no executive powers and only limited responsibility.

The public water supplies should be guarded with especial care by the local authorities, but in many instances these would be powerless without the coöperation of the authorities of the State. This is shown by the action of Raleigh in securing special legislation to prevent the pollution of its source of water supply. Without such legislation every public water supply in the State, located outside the corporate limits of a town, is completely at the mercy of every ignorant or wanton trespasser. In Massachusetts the law prohibits the drainage of any polluted substance into a stream within twenty miles above the place where it is used for a water supply, and gives the supervision of public water supplies to the State Board of Health. The approval of the Board is a legal requirement for the introduction of every system of water supply or sewerage. The report of the Committee on the Pollution of Water Supplies, which was read at the annual meeting of the American Public Health Association at Milwaukee, Wisconsin, November 20–23, 1888, and from which I have made some extracts in this paper, concludes: "It is the well considerd belief of this Association that it is an imperative necessity that State Legislatures should give their boards of health that financial support which would enable them to act intelligently on all questions pertaining to the public water supply, investing them at the same time with the supervision of the said supplies and with power to preserve these waters from contamination by sewage or other injurious matters."

It may be objected that a sanitary law, such as I have outlined, would be too costly. It may cost the one-hundredth part of what is annually lost to the State by typhoid fever alone, and perhaps approximate, or possibly slightly exceed, the one four-hundredth part of the entire loss by preventable diseases. If it did not annually save one hundred times its cost it would be a dismal failure.

If we look at what has been accomplished elsewhere these statements will not seem unwarranted. In Michigan the saving of life from scarlet fever in the last eleven years amounted to 3,718, and in 1886 appropriate sanitary measures saved the lives of 298 persons who, under the usual conditions, and according to former epidemics, would have died of diphtheria in a few localities. In Memphis the death-rate has been reduced in six years from 35 per 1,000 to 23.8 per 1,000. In Chicago the death-rate has been reduced in the last five years from 26 to 19.46 per 1,000—a saving of nearly 20,000 lives.

Let us take a lesson from Florida. Last winter a case of yellow fever was smuggled into Key West. There was only a nominal board of health in the State and the physician who attended the patient just as is the case in our State, was under no responsibility to report the nature of the disease. Other cases appeared in various parts of the State and the facts were suppressed. It was nobody's business to let the truth be known. Need I recall the terror and panic of the people of Florida, the horrified amazement of the rest of the country when it learned that nearly the whole State was infected by the dreaded pestilence? Leaving out the deaths and sickness, the mere money loss to the State from the suspension of business and the depreciation of the value of property can only be reckoned by millions, while the confidence of the civilized world received a shock from which it will take years to recover. A properly constituted board of health would have had timely notice of the first case and stamped out the disease before it became epidemic. It is needless to say that the first care of the Florida Legislature will be the establishment of a model State Board of Health.

Until the year 1885 the Legislature of the great State of Pennsylvania entertained the quite prevalent opinion that sanitation was a local affair and restricted their sanitary legislation to the larger cities. Then came the Plymouth epidemic, and, as a result, a State Board of Health. Do we in this State need a similar lesson?

The North Carolina Board of Health need the moral and financial support of the people of the State to carry out their mission. If these are given grudgingly only niggardly returns can be expected. Give them enough to prosecute their noble work, and if they fail to fulfill their promise and your expectations they will deserve to be cast out as unprofitable servants.

The moral aspect of sanitation has been incidentally touched upon. If I point a loaded pistol at a fellow-man and pull the trigger, I commit a murder. If I knowingly allow that man to be exposed to a disease which takes his life, am I innocent of his death? Human law may exonerate me, but how can I plead at the bar of God and my own conscience? The laws of life and health are plain and simple. They are the laws of God—we know them—happy are we if we do them. The time has come in modern civilization when ignorance and indifference cannot be pleaded in excuse for neglecting the enactment and enforcement of sanitary laws.

In ghastly mockery of the words of hope and resignation graven on the tombstones of our loved ones who have succumbed to preventable diseases, we see standing out in letters of fire, which should scorch and sear our consciences: "Strangled by filth"! "Killed by willful ignorance and neglect"!

The deaths from preventable diseases in this State are simply murders, and we are left to decide in how far each of us is answerable to the just Judge of all for the crime.

The ignorance and indifference, the fatal blunders of the past cannot be remedied; we cannot recall the dead; but if to-day we amend our ways and heed the sanitary demands of the living, our loved and lost will not have suffered and died in vain.

THE NECESSITY OF STATE INTERVENTION TO PREVENT ADULTERATION OF FOOD AND DRUGS.

By Prof. F. P. Venable, Ph.D., F.C.S., Chapel Hill.

The purity of our foods and drugs should be a matter of paramount importance to us. It is a matter affecting both health and pocket. The sanitary officers who look after the air we breathe and the water we drink, ought certainly to inspect our solid food as well. Danger does not lurk in sewer-gas or in the miasms of the marsh only, nor in contaminated wells and foul reservoirs alone. We might avoid all of these sources of disease and yet fall victims to poisons in our foods or impure medicines.

And yet it is very difficult to effectually arouse interest in this subject. An occasional newspaper article filled with sensational exaggerations gains the public attention for a brief while, and then barter and sale go on as before, and the same luck that attends the tottering footsteps of the baby and the staggering drunkard is looked to to befriend us and help us escape the greed and criminality of our fellows.

What this indifference springs from I cannot tell. Perhaps for most of our citizens the coffee or tea is so poorly prepared that the genuine article would be unrecognizable; or the fat and soda and bad cooking are productive of such indigestion as to completely mask the effects of any mildly poisonous adulterant. The majority of people who think upon the subject at all may regard adulteration as beyond their power to check or remedy, and throw themselves upon the mercy of the more honest dealers.

But whether we choose to stop and think it over or not, the purity of our food and its wholesomeness is an exceedingly important subject, whether we prepare it right or not is another matter, also very important, and the remedy for which is within the power of each individual. The remedy for the first must be so sought for collectively.

Sensationalists in books and newspapers have unquestionably been guilty of exaggeration as to the frequency and the dreadful nature of adulteration. The matter is bad enough without exaggeration. Let us enquire into the extent to which adulteration of articles of food is practiced, using only entirely reliable data.

The National Board of Health some years ago appointed a committee to draw up a report as to the extent to which the adulteration of food was practiced in the United States, but no report has ever been published. Of course the work of such a committee must of necessity have been very incomplete, yet it would have been of great value, and it is to be hoped that some department of the Government will carry out such an investigation. In the place of general and full statistics I give some compiled from various boards of health and other authorities by Battershall, which will enable us to form a judgment as to the extent of adulteration. Over 45 per cent. of the ground coffees examined were found to be adulterated; 50 per cent. of the baking powders used in the United States contain injurious substances; 50 per cent. of the honey examined by the Massachusetts Board of Health in 1885 was adulterated; so, too, was 58 per cent. of the cheaper confectionery; over 70 per cent. of the samples of vinegar examined in 1884 fell below the standard; 71 per cent. of the olive oil was spurious; 60 per cent. of the mustard, 61 per cent. of the pepper and 45–66 per cent. of the different spices were adulterated. A well enforced law of the United States Government protects us from fraud in imported teas. All of this should show us conclusively that impure, unwholesome food is sold very commonly, and some protective measures must be adopted against such adulterations.

Feverish competition in trade unquestionably leads to much of the adulteration. Efforts at underselling reduce the prices below all margin of profit, and the dealer can only avoid loss by selling an inferior, adulterated article. A merchant sees goods around him sold at prices which he knows are under the market value of the genuine article. Foolish seekers after so-called "bargains" are attracted by such bribes, and the merchant's trade will probably be drawn away unless he, too, yield to the pressure and keep the cheap, fraudulent stuff on sale himself. Who is to call the halt in such a competition? Which of the competitors will turn back to honest ways? Nothing but the stern hand of the law can ever put a stop to such fraudulent practices. The rich can buy of high-priced grocers, and even they are often deceived in the safe-guards they imagine thrown around their purchaser. The great mass of the people who are compelled to carefully look to the expenditure of every dime, lack knowledge and power to protect themselves from deception and injury. Should not the State give us protection, then?

How great the adulteration of food in North Carolina is, we have no direct means of judging. Wealth is lacking as a safeguard, however, and dishonest manufacturers must find the State a promising field for the sale of their wares. Driven from the markets of the large cities by jealous inspection and rigidly enforced laws, they find defenceless prey in the citizens of North Carolina. Fortunately, as an agricultural people, much of the food is home-raised, but coffee, sugars, spices, cheese, canned goods, lard and many other groceries and all of our medicines are beyond our control. In the towns, of course, the number of articles of food gotten from outside the State is largely increased.

How to correct this state of affairs and put an effectual check to the adulteration of foods and drugs should be one of the foremost questions with the people, and will become the cry when they wake up to the dangers threatening them. The State, by proper laws, has established a fertilizer central station, which has enabled the farmer to secure pure food for his plants. The laws have worked successfully and have proved beneficial. Cannot the same power interpose in behalf of the food of the people—a far more important matter. Wise laws, faithfully and prudently administered, would prove a blessing to the retail merchant as well as to the consumer. An honest dealer would be glad to have an inspection which would enable him to tell whether his goods were pure or not. Only a short time ago one of our merchants came to me much troubled about his goods. He suspected adulteration in them and wished them analyzed. The expense of single private analyses prevented this, and he was forced to transfer his custom from one Northern wholesale firm to another in the hope of finding an honest one. The brunt of the law should fall upon the wholesale merchants and manufacturers.

The law must be clear and direct, and, experience has shown, very carefully worded. It must include all of the machinery necessary for its enforcement, providing for inspection, analysis and the suitable punishment of offenders. Some of the States have passed laws which have become dead letters from lack of this very machinery. Several of the States have very full enactments against the adulteration of food which seem to have worked well. Nearly all of the States have at least partial laws on the subject. I hope, in the not far distant future, this State will be roused to the necessity for some such law, at least authorizing inspection and prohibition of the sale of injurious articles.

The question may be raised whether such laws effect any diminution in fraud. The records of the Paris municipal laboratory, of which further mention will be made, show that they do. This laboratory reported in 1881 that the following proportions of the samples analyzed were found "bad": Milk and cream 50.66 per cent.; wine 59.17; foods and drugs generally 50.43. The November report for 1888, after seven years enforcement of the law, show of milk 9 per cent.; wines, etc., 55; foods and drugs 21 per cent. "bad." A very wonderful decrease.

The work of this laboratory extends now to a supervision of the manufacturing establishments, thus striking at the very root of the soil. An incident related of a London chocolate and cocoa dealer shows the necessity for watching the manufacturers. This dealer was desirous of securing pure flake cocoa and of supplying his customers with the same. As he was unable to purchase the pure article at the factories, he secured pure materials, berries, etc., and took them to a factory to be prepared for him. The preparation which the manufacturer returned him from his own pure materials was subjected to analysis and found adulterated. The dealer was forced to build and run a factory himself to secure the pure article.

Against wine adulteration the laws do not seem so effective. From the time of the Romans it has been a fact that even dealers owning vineyards cannot secure pure wines of the more famous brands. Such a thing as pure sherry, for instance, is not to be procured. German experts are actually discussing the point as to whether a different law or a modification of the existing one should not be passed for this special wine. The wine is tampered with in spite of all warnings, and Germany must either give up her law or her sherry. But such cases do not concern the people. It is the simple, plain, every-day food that we want pure, and only by governmental intervention can its purity be secured.

The struggle against adulteration has been going on ever since man's greed overcame his honesty. Governments have striven to protect their subjects, but with indifferent success, down to this age, in which the introduction of scientific methods of inspection and testing has put it into their power to tell the good from the bad. Greece had her wine-inspectors, England her "ale-tasters" and "assizes of bread." The crudity of the general tests applied is well illustrated by the account given of the way in which the "ale tasters" examined the liquors for an excess of sugar. Clothed in leather breeches they sat upon a wooden bench on which some of the liquid had been spilled. The relative difficulty experienced in rising gave them an indication of the amount of sugar.

The old-time laws did not fail for lack of punitory clauses—fines, imprisonment, sitting in the pillory, with the loaves of false bread tied about the neck or parading the streets with similar decorations, riding for a day enthroned in the city garbage-cart, everything down to enforced consumption of the adulterated articles. This latter was sometimes equivalent to the death-penalty. At Biebrich-on-the-Rhine a dealer was forced to drink his own urine. He died from the effects. Very often the penalties were excessively severe, as burning and burying alive in Germany. Yet the ease with which they escaped detection and the profits of the business were too great a temptation. Adulterations flourished and the governments were unable to suppress it. Modern legislation in England was largely brought about by the careful scientific work of the distinguished chemist Aceum. But the first Parliamentary commission and general legislation were due to the influence of the *Lancet* and its Sanitary Commission, under the leadership of Dr. Hassall. This Commission was appointed in 1855, and effective legislation in England on this subject dates from that year.

Mere legislation, without proper machinery for enforcement of the laws, will not check adulteration. The case of France may be cited as one of inefficient legislation at first, afterwards made effectual by a system of inspection, fines and publication of the offences. The account is taken from Count Wihair's report. Under the laws of France the average yearly convictions from 1846–1850 was 196; 1851–1855, 6,780; 1856–1860, 8,442; 1861–1865, 4,605; 1866–1870, 3,014; 1871–1875, 3,209; 1876–1880, 3,398.

In spite of these convictions, adulteration of foods and drugs was very common. The difficulty of detection, the indifference of the public, the small amount involved in each transaction, the trouble, annoyance and expense of prosecution and the doubtful recompense following it, even in cases of success, were causes operating upon human nature applying in France as well as elsewhere.

In January, 1881, was established the most effective engine against adulteration yet devised—the municipal laboratory already mentioned. Scientific experts analyzed samples brought them by inspectors or the general public, and the results are still regularly published. Manufacturing establishments are visited and everything fraudulent confiscated. Those guilty of breaches of law are prosecuted and in every respect the law firmly administered; 24,655 visits of inspection were made in 1881; a great many more are made now annually; 6,517 specimens were analyzed in 1881; between 2,000 and 3,000 per month are analyzed now. The cost to the public is made exceedingly low. The result has been that the number of samples found adulterated has been reduced over 50 per cent. The certainty of inspection, examination and the publicity are having due effect.

It seems to me North Carolina might adopt, at a low cost, a system of inspection making public the results. Much would be gained by it. This State has now the proud privilege of being one of the only three in the Union without legislation against adulteration. The others are Arkansas and Mississippi. There is a law, however, allowing those desiring it to have analyses of suspected articles to be made through the Board of Health.

It seems to me clearly the duty of North Carolina to protect her citizens in this matter so important to their welfare. The citizen should demand it as his right, for individually he is helpless against the purveyors of his foods and medicines. It will cost the State something, of course, but can we afford to be "penny wise and pound foolish"? To quote a distinguished Frenchman, "It is an axiom universally admitted at the present day that no expenditures of the government prove so profitable as those which are made in bettering the public hygiene."

WHAT CASES OF INSANITY SHALL WE TREAT AT HOME?—Dr. Landon C. Gray, in the *American Journal of the Medical Sciences* for January, discusses the above question. We abstract from his paper the following: Cases favorable for home treatment may be catalogued as follows: Subacute mania; melancholia that is non-hallucinatory and without great agitation, præcordial fear, or stupor; many cases of primary dementia; many cases of post-febrile and so-called puerperal insanities; insanity of doubt; most cases of epileptic insanity; some cases of hysterical and periodical insanity, as well as of the so-called circular varieties; certain insanities of pubescence; the insanities of childhood. The forms of insanity which should be sent to an asylum are: All chronic insanities; all forms of insanity characterized by homicidal, suicidal or violent outbreaks; transitory mania; paranoia; the form of insanity known as "katatonia"; melancholia with stupidity, great agitation, or distinctly marked præcordial fear; general paralysis of the insane; all forms of dementia constituting the terminal stage of insanities, or that are caused by organic brain disease, or that are senile; the insanity of masturbation." The article abounds in helpful hints which may serve a good turn to the general practitioner in those pinching times of necessity in which all of us occasionally find ourselves.

SELECTED PAPERS.

CLINICAL SOCIETY OF MARYLAND.

[Stated meeting held January 18, 1889.]

The 220th meeting of the Clinical Society of Maryland was called to order by the President, Dr. George H. Rohé, in the chair.

Drs. E. K. Ballard, W. Milton Lewis and J. Holmes Smith were elected members of the Society.

Dr. John R. Winslow read a very interesting paper on

PEPSIN AND ITS INCOMPATIBLES.

And exhibited a number of tests.

Dr. Joseph T. Smith said that he was much interested in this subject which had been so clearly brought out by Dr. Winslow. The uses and action of pepsin has been a mooted question for sometime, and we have all gotten results just as varied as the doctor has shown.

Dr. R. M. Hall said he was much interested in the paper. He had used pepsin on many different occasions, and one of his chief objections to it was the disagreeable odor. He was glad to know that there was a preparation that was odorless.

Dr. J. W. Chambers said that, according to Dr. Winslow's experiments, the best preparations of pepsin are manufactured in America; it seems to show that we either have better chemists or better pigs, he did not know which. He thought that it would be advisable for Dr. Winslow to send a copy of his paper to the German chemists and let them see what we are doing.

Dr. John G. Jay said that good pepsin may be given without any benefit. Druggists usually use a paste in putting such ingredients into capsules; this often becomes hard and the pepsin, in consequence, does not act. Physicians should order pepsin always to be put up dry.

Dr. George H. Rohé said that conclusions might be erroneously drawn from these experiments. It is no proof that alcohol taken into the stomach during the administration of pepsin will interfere with its action, because its addition to pepsin in a test tube will bring about deteriorating results.

Dr. John R. Winslow said, in conclusion, that the test regarding alcohol was simply in reference to the wine of pepsin where it remains in solution. There is no doubt that a large dose of one preparation of the drug may give us as good results as a smaller dose of a different preparation, but it is well for us to know which is the best one, and then we can prescribe to advantage.

Dr. T. W. Kay read a paper on

ENUCLEATION OF TUBERCULOUS GLANDS,

and his conclusions were as follows :

1. Scrofulous and tuberculous deposits are identical, microscopically and clinically.
2. Tuberculosis, as a rule, as acquired by the respiratory passages in adults and the alimentary canal in children.
3. Pulmonary tuberculosis is generally secondary, due to a spread from a local deposit.
4. These local deposits are generally confined to the lymphatic glands which are in reach of the surgeon.
5. Every local deposit may be a cause of general infection.
6. All enlarged glands, not due to mechanical irritation, and not yielding promptly to medication, should be removed if possible.
7. The removal of superficial non-suppurating glands is easy and free from danger.

Dr. Randolph Winslow said that he thought that all surgeons would agree with Dr. Kay in the procedure that he recommends. He would temporize as little as possible, and use as little drugs as he could do with, because they often aid the progress of the disease, instead of arresting it. These growths should be considered malignant, and when in a gland that we can reach, it should be removed immediately. He had been doing this for years. Like all malignant growths, if we delay, secondary deposits will surely follow. He had a case once where a girl had some enlarged glands about her neck. Shortly afterwards her temperature arose rapidly, and she subsequently died of acute tuberculosis.

Dr. J. W. Chalmers said that he had had a certain amount of experience in this class of cases, and some years ago he read a paper on the subject and made a statement that these growths should always be considered malignant, and, when possible, they should be removed. The sooner this is done the better. The surgeon who removes the greatest number of these glands from children will have the least number of cases of general tuberculosis to follow. Tuberculosis of the testicles has often been treated by their removal, and with most excellent results, why not the same in glands elsewhere?

Dr. J. E. Wiltshire said whilst he is inexperienced in the operative part of the subject presented by Dr. Kay, yet he, in common with others of the profession, is interested in the study of tuberculosis, and the more he studied the subject the more he becomes alarmed for the safety of the human race, because of the ubiquity of the tubercular bacilli all are alike liable to their infection. These enter the system by the various avenues of ingress, and if they find a soil favorable to their culture and colonization, tubercular foci are established step by step, until a general military tuberculosis is started up, unless the tissues are vigorous enough to resist the march of the enemy that threatens them. Dr. Wiltshire is in unison with Dr. Kay as to the tubercular bacilli entering the system by the air-passages and alimentary canal, and would like to call attention to the fact that they also find their way through cuts and abrasions in the skin, and when once there they find easy access to the lymph glands, which are a favorite and congenial soil to their culture. The swollen and cheesy glands so often seen in the axillary and cervical regions, and accepted by some as scrofulous, are in fact tubercular foci, only waiting for the conditions to appear that quicken and favor the spread of their contagion. That these foci, if accessible to the surgeon's knife, should be removed, no one will gainsay. It is true we do not know that we are removing the sole focus of the disease, still the surgeon is warranted in removing that which might in the future prove a possible source of a general infection.

Dr. T. W. Kay said that he had hoped the subject would have received a more extensive discussion. If we find the glands enlarged, superficial and within reach, they ought to be removed.

Dr. B. B. Browne reported a case of

LAPAROTOMY FOR ABDOMINAL TUMOR WITH FISTULOUS OPENING AT THE UMBILICUS,

and showed the specimen.

Case.—Mary M., single, aged thirty years, had an attack of continued fever about five years ago, lasting several months. About one month after her recovery she noticed a swelling at the umbilicus, which a month afterwards ruptured and discharged a large amount of pus. This fistulous opening at the time the case came under observation (about one year ago) measured five inches in depth. The probe passed into a tumor situated between the umbilicus and symphysis. The tumor was adherent to the abdominal walls on the left side, to the fundus of the uterus and to the left broad ligament. It was removed by enucleation. There was no pedicle. The patient has done well; there has been no rise of temperature of more than one degree.

Microscopical examinations of the growth showed it to be a papillotomous cystic adenoma.

Dr. W. P. Chunn asked if the tumor involved either ovary.

Dr. B. B. Browne said no—both ovaries were perfectly free. The tumor had no pedicle and was attached all around by connective tissue.

Dr. R. M. Hall asked if he had used antisepsis in doing the operation.

Dr. B. B. Browne said that as it was a suppurating wound with which he had to deal, he used a solution of carbolic acid and corrosive sublimate. The wound was dressed with iodoform gauze.

Dr. W. B. Platt reported a case of

STRANGULATED HERNIA IN A WOMAN EIGHTY YEARS OF AGE.

Dr. James M. Craighill asked if vomiting is not a prominent symptom after the relief of a strangulated gut.

Dr. W. B. Platt said that it might occur from the effects of ether, but not from any other cause.

Dr. J. W. Chambers said that this case shows how slightly dangerous is this operation if the gut is in a reasonably good condition. He thinks that the public has been badly trained in reference to it. He shall use this case as an illustration in arguing in favor of the operation when he has to perform it in the future.

A FATAL CASE OF DOUBLE PHLEGMASIA DOLENS, WITH REMARKS ON THE NATURE OF THE DISEASE—By A. K. Bond, M.D., of Baltimore, Md.—(Read before the Clinical Society of Maryland February 1st, 1889.)

The patient was a mulatto woman, 33 years of age, apparently well-formed and healthy. She had one child about 18 months old.

I was first called to attend her February 18th, 1885, in labor, but on arrival at the house I was told that she had been delivered, after a normal labor, by the nurse, and that my services were not needed.

Being summoned again, 13 days later, I found the patient in a very dirty room attended only by her mother, who was away all day at work. She was very weak, and upon examination I found symptoms of circumscribed pneumonia in the left suprascapular region. For this I treated her one month. During this time the temperature in the mouth ran from 104° in the beginning, irregularly down to 99.4°, the respiration varied between 20 and 30, and the pulse, which was very weak and compressible, gradually descended from 130 to 90. There was no corresponding improvement in the patient's general health. The mind was clear, there was a sense of great weakness, a slight cough, a poor appetite, a moist tongue, the urine looked natural, there was slight constipation and some blood-tinged leucorrhœa. There was, at the first, much hypogastric pain. There were no chills.

The treatment was with compound licorice mixture, quinine and whiskey.

On April 2d, a month and a half after delivery, she began to suffer, in addition to the lung trouble, from severe pain in the left hip, above and a little behind the great trochanter. The temperature was now 100°, the respiration 20, the pulse 100.

The pain in the left hip continued for two weeks, yielding somewhat to blisters over its seat, dressed with morphia. During this time the temperature continued between 100° and 103°, and the patient seemed greatly depressed, though bright and cheerful when the pain was less severe. Her appetite was good, her sleep natural, and at times she was able to sit up. Quinine, 4 grains three times a day, was given, with morphia when the pain was great.

Two months after delivery the left leg began to swell, from the groin downward to the foot. The parts behind the great trochanter were not swollen, and the pain there became less severe. The tissues in the groin were hard and knotted and very painful. The pain there began gradually a day or two before the swelling, and extended along the line of the femoral artery. The tissues of the limb became more and more tense until the climax was reached, when they were so tense as not to pit on pressure. The tension then gradually decreased. The patient could hardly move the limb. The skin of the affected parts had a peculiar pale whitish appearance, with dark spots over the course of the veins. At first it seemed a little warmer than that of the opposite limb. The patient complained much of thirst. The appetite was good, the bowels regular. The supply of milk from the breasts had gradually ceased. The temperature varied between 102° and 103°. Quinine, tincture of iron and whiskey were used as required, with local washes of opium. At the end of the second week of this swelling she was able again to move the limb a little. She was very feeble; temperature was 101°, pulse 130 to 140.

At this time she complained of chilliness, and two days later her right knee began to swell, as the left had done, the swelling being accompanied by pain behind the great trochanter and in the groin. She lay now propped up in bed with the left leg straight and the right leg rotated inward—previously the right had been kept straight and the left turned in. There was no excessive heat of the skin, and she seemed no longer feverish. The swelling in the left leg continued to decrease. The treatment was whiskey and tincture of iron.

Four days later a bed-sore appeared on the left side over the sacrum, and the next day another over the middle of the sacrum. The left leg was now nearly well, the right pitted on pressure up to the knee, but above was too tense to pit.

The whole limb was painful when touched. Pulse was 130. Sleep was good, appetite fair. Ten drops of tincture of digitalis were ordered three times a day. Two days later I found her much worse, reclining with drooping eye-lids, labored breathing (apparently not from obstruction to the entrance of air into the lungs), rapid and weak pulse. The face was extremely wasted, the limbs were as before. I stopped the digitalis tincture (only a few doses had been given), and increased the dose of whiskey. The patient died in the afternoon of this day, 12 weeks after delivery and 4 weeks after the swelling first appeared. The immediate cause of death seems to have been thrombosis of the right side of the heart or pulmonary artery—perhaps embolic. There was no post-mortem.

In an article of this sort there is no opportunity for a thorough discussion of the diseases in question, the literature of which is large. I shall, however, review rapidly some important questions connected with it.

In regard to the nature of phlegmasia dolens, much remains to be known.

Most writers, however, agree that it is a peculiar form of œdema, caused by pressure upon, or thrombosis in, the veins of the part, associated with an abnormal state of the blood, a stoppage of the lymph circulation, or else some unknown condition of the part. Thrombi in the veins, especially the femoral, are found in nearly all cases, but occasionally (Lusk's Midwifery) no thrombi can be found; in these cases there is probably pressure from without upon the veins.

On the other hand, fatal phlebitis of the femoral vein does not necessarily (Pepper's System, vol. 3) produce phlegmasia dolens, and femoral phlebitis causing complete obstruction of the vein› produced artificially in a healthy animal, differs from phlegmasia dolens in that it causes but little pain and only slight effusion into the cellular tissue, while the limb pits readily on pressure.

Phlegmasia dolens may occur in males and non-puerperal females in conditions of depressed vitality, as during convalescence from acute disease, and in persons suffering from phthisis, cancer and other cachexiæ. It may affect the arms as well as the legs.

The compression of the veins or thrombosis, which is essential to the disease, may be produced in several ways:

1. There may be a tumor or other body pressing upon the great veins in the pelvis or in the limb.

2. Peri-uterine cellulitis, which generally becomes circumscribed or spreads upward and into the abdominal walls, may extend downward, causing infiltration of the sheaths of the vessels and nerves which supply the lower limbs, with compression of the same. Thrombosis of the veins and exudation into the tissues result from this pressure.

3. Thrombosis—probably of septic origin—may begin in the veins

of the uterus or adjacent parts, and extend by way of the spermatic or hypogastric veins to the femoral vein and its branches.

4. The blood, loaded with effete, perhaps septic, material from the womb, or altered in some essential particulars by other influences, may acquire a tendency to form thrombi in any part of the body where the conditions are suitable for thrombosis, and obstruction in the veins of the brain, lungs or limbs may occur.

In regard to the structure and mode of formation of these thrombi, I may quote, in general terms, from an article by Dr. Welch (Transactions Pathological Society of Philadelphia, 1887). The thrombi which are formed in circulating blood, as a result of slowing of the blood and some abnormal condition of the inner coat of the vessels, may or may not be stained by the presence of red corpuscles; yet they differ in many respects from red clots found in stagnant blood. In the formation (experimentally) of these white thrombi there is first an accumulation of blood-plates at the point affected, white corpuscles then make their way into the masses of blood-plates, and the formation of fibrin takes place. Colonies of micrococci are often found in such thrombi, when they occur in the course of infectious diseases. In a case of thrombosis following parturition, fresh white thrombi were found in the femoral and iliac veins, the inferior vena cava, the branches of the pulmonary artery and the cerebral sinuses. Such cases in which many thrombi form in distant parts of the body, are most naturally interpreted as examples of thrombosis caused by fermentative changes in the blood.

Knowing the conditions which dispose to phlegmasia dolens, we may more successfully guard against it.

In case of pressure of tumors, etc., upon the veins, we may not be able to accomplish much; but peri-uterine cellulitis and thrombosis beginning in the uterine veins, as well as those changes in the blood which dispose to general thrombosis, may be avoided in most cases by strict observance of the laws of cleanliness in labor and childbed, by protection of the tissues of the mother from injury during labor, by the prevention of severe hæmorrhage and by attention to the general health of the patient.

When phlegmasia dolens has once begun, there is one point in the treatment which should always be kept in mind. Death occurs, in the rare cases in which it does occur, from the separation of a part of a thrombus, its conveyance by the blood-stream and its lodgment in the pulmonary arteries. This is a general, if not invariable, rule. To prevent this accident, the limb affected should be kept at rest from active and passive motion, and the patient should, as far as possible, maintain a horizontal position.

In the case which I have related the patient was allowed to move about and sit up, because she became very weary of lying flat in bed, and because the text-book which I was following—Leishman's Midwifery—gave no caution at all against movement and dislodgment of thrombi.

It should never be forgotten that phlegmasia dolens arises in many cases from blood-poisoning, and that a physician, passing directly from such a case to a healthy parturient, may fatally infect the latter.

In the case which I have now recorded the swelling in the leg began at a much later period than is usual, but the pneumonic symptoms which appeared 13 days after delivery may have really resulted from a thrombosis (embolic or primary) in the pulmonary vessel. The sciatic pain which lasted for two weeks before the swelling in the leg appeared, may have been the result of pressure of a pelvic exudation (cellulitis) upon the sciatic nerve. Although the patient was extremely feeble toward the end, yet death set in with a suddenness which suggests, taken in connection with the great increase of dyspnœa, the plugging of the pulmonary artery with an embolus.

COCAINE-POISONING.

Since the introduction of cocaine into the practice of medicine so many cases of poisoning have occurred that it is important to analyze these for future guidance. It is the fate of nearly every useful but powerful drug, before its complete action is recognized, to be either too extensively or too recklessly employed. Perhaps this has been the case with cocaine, because it is commonly used for its local anæsthetic effect—to alleviate local burning, tenderness or pain—and for its anæsthetic effect prior to the extraction of teeth or other minor operations. Although these local uses are the chief ones for which cocaine is employed, yet it is important to bear in mind that it is a very powerful poison. When simply painted on to the parts serious results do not often ensue, except when applied to the pharynx or larynx in the form of spray. A tendency to syncope and complete unconsciousness may follow its use in this way. When injected under the gums for the extraction of teeth, or under the skin for the removal of a tumor or the opening of an abscess, great care is necessary in graduating the dosage, a fact by no means generally recognized. And this fact becomes all the more important when it is remembered that there is very great idiosyncrasy in the action of cocaine. A number of trials were made with cocaine by Decker, with the view of lessening the pain caused by hypodermic injections of calomel; and he found that a dose of 0.05 gramme (¾ of a grain) ought never to be exceeded in a hypodermic injection, and that usually half that amount, ⅜ of a grain, was safer to administer. This does not mean that a dose larger than ¾ of a grain cannot be administered with impunity; but it is impossible to predict that a larger dose will not cause serious symptoms of poisoning.

Besides its action as a local anæsthetic, cocaine is a stimulant to the central nervous system first, and finally a paralyzer. It increases the respiraitions and causes death either by respiratory paralysis, or more commonly, according to Mosso, by a tetanus of the respiratory muscles. Cocaine, moreover, paralyzes the vagus, causing extreme rapidity of the heart's beats; it raises the arterial blood-pressure and increases the intestinal movements. It diminishes also the secretion of sweat and of saliva, and causes a considerable rise of body temperature. According to Mosso, cocaine is one of the most energetic substances known in causing an increase of the temperature.

In many of its actions, therefore, cocaine resembles atropine; in dilating the pupil, in stimulating the central nervous system and finally paralyzing it; in paralyzing the vagus, in diminishing the secretions and in increasing the intestinal movements. It differs from atropine in producing a contraction of the peripheral blood-vessels, while the primary contraction caused by atropine rapidly passes into dilatation. From this epitome of the physiological action of the alkaloid, the symptoms of poisoning in man are readily understood.

The question whether in a given case a drug will produce symptoms of poisoning or not depends chiefly on the dose given, but also on the mode of administration, and on the rapidity of elimination. Cocaine given hypodermically is rapidly absorbed; it is also, in the healthy individual, rapidly eliminated by the kidneys. If, however, there is extensive disease of these organs, elimination will be prevented to a greater or less extent, and the symptoms of poisoning will be more serious. In a recent case, in which 22 grains were accidentally administered by the mouth, the patient, a man, died almost immediately. At the post-mortem examination it was found that one kidney was tuberculous and the other was not functional owing to to advanced atrophy, a condition of organs which would certainly prevent the rapid elimination of the alkaloid.

The slow elimination in other persons may explain some of the cases in which cocaine has caused poisoning. Mowat relates the case of a man, aged 29, in whom one drop and a half of 10 p. c. solution was injected at the sides of a rodent ulcer of the eyelid, previous to operation. The dose was only about 1-7 of a grain, but as the wound was about being sewn up the patient became pale and gasped for breath, while his legs were stiff and cold. The pupils were half dilated and reacted to light; the pulse was weak and very frequent. The knee-reflex was exaggerated, and clonic spasms of short duration supervened. When these had ceased the patient appeared drunk, and, on recovery, was giddy for sometime. It is unusual to observe such serious symptoms of poisoning from so small a dose. The great vascularity of the eyelid may have aided the rapid absorption of the poison. Poisoning, however, by larger doses, is by no means uncommon. A dentist, for example, injected into the gums of a girl, aged 19, 1⅛ grain (0.1125 gramme) of cocaine in two portions. Anæsthesia was complete in a few minutes, and the tooth was extracted with ease. After washing out the mouth once or twice, the patient became very pale and fell into convulsions. Nitrite of amyl and cold affusions were tried, but had no effect in restoring the patient. She became unconscious and groaned, while the clonic spasms in the muscles of the body and extremities lasted for five hours. The pupils were dilated and did not react to light. At first the pulse at the wrist could not be counted, but afterwards it was 176 in the minute. The temperature was raised, being 38.2 C. (100.8 F.), and the respirations were 44. The unconsciousness lasted two hours after the spasms had ceased.

The patient recovered consciousness in seven hours, but was then unable to use the extremities. There was well-marked photophobia, diminished sensation in the hands, anæsthesia of the mucous membranes of the nose and mouth and loss of smell and taste. The pulse was now 132 and the respirations 28 in the minute. Gradual recovery took place, but there was pain in the region of the heart for six days. During the first twenty-four hours after the cocaine had been given there was diminution of the amount of urine; there was also sleeplessness for thirty hours, and complete loss of appetite for four days. The patient was treated with large doses of opium, but no appreciable effect was observed.

In another case, where 1¼ grain was injected for an acute attack of sciatica, there was soon great uneasiness and excitement, with a lively but constantly changing expression of countenance. There were choreic gesticulations with the hands; the pupils were irregular, the pulse very frequent and the breathing rapid. Opium given in small doses was not of much benefit to the patient. Recovery did not ensue till four days after the poisoning, and even then the patient was restless and had a tendency to giddiness.

In a third case, a boy aged 13 years received about 1½ grain at the side of a subaceous cyst, which was about to be excised; 25 minims of a solution of 2 grains in 35 minims of water were actually given. In five minutes the patient became pale and restless, so that the operation was rapidly performed. Dyspnœa ensued, and the pulse-rate rose to 120, while the restlessness increased, and the patient wrung his hands. The heart's action was very much disturbed, the pulse becoming so rapid as scarcely to be felt at the wrist; the respirations were frequent and irregular. In three-quarters of an hour there was nausea, with eructations and pain in the epigastrium. Brandy was administered and the epigastrium rubbed. In four hours the patient was quite well. It was noticed that, at the time of the operation, the anæsthesia was not complete.

It is evident from these cases that any dose above 1 grain, whether injected into the gums or under the skin, may give rise to serious symptoms, happily, however, not fatal. The case of poisoning with 1-7 of a grain mentioned above was undoubtedly due to some idiosyncrasy on the part of the patient; the other cases of poisoning with doses above a grain only tend to confirm Decker's statement that no dose over ¾ of a grain ought to be administered hypodermically. Indeed, it is not as a rule necessary to use a larger dose than this; if judiciously directed, the injection may be so made that complete anæsthesia may be obtained over a large area with even ½ a grain. The object is to obtain local anæsthesia without producing any of the general physiological actions of the alkaloid. In some cases the advent of poisonous symptoms seems unavoidable, and the question arises, what is to be done?

Morphine is to some extent an antagonist to cocaine, as it is to atropine; but no beneficial results appear to follow the administration of opium or morphine in cocaine-poisoning, even in large doses. Nitrite of amyl has been recommended as an antidote; it dilates the peripheral vessels, while cocaine contracts them. In cases of poisoning, however, it does not appear to have been of much use. The chief symptoms in severe cocaine poisoning are referable to the nervous system; these are unconsciousness and convulsions. The latter, which are clonic in character, are cerebral in origin, since they are not produced in animals if the spinal cord be divided. However death occurs either from respiratory paralysis or perhaps more frequently from tetanus of the respiratory muscles. Cocaine, in fact, acts upon the central nervous system from above downwards; it first affects the cerebral hemispheres, then the medulla oblongata, and finally the spinal cord. Chloral hydrate antagonises all the actions of cocaine except the rise of temperature. Although chloral itself produces a great fall of body temperature, it does not counteract the rise produced by cocaine. In poisoning by this alkaloid, Mosso, as the result of numerous experiments, advises the inhalation of ether or chloroform; in this way death by respiratory tetanus is prevented. When the patient is recovering somewhat, chloral in small doses may be administered. But prevention is better than cure; and there is no doubt that as great care ought to be taken in using cocaine for its local anæsthetic effect as in the exhibition of any other powerful drug, and especially is this the case when it is injected hypodermically.—*British Medical Journal.*

EDITORIAL.

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THE LICENSE LAW RATIFIED.

The License Bill, as printed in the February Journal, is now the law of the State. It had not been so announced at the time it was published in our columns.

We believe now that our law will stand the test of time. The registration provided for by it will be a basis upon which the grand jury will be able to bring specific indictments against any person practising illegally.

THE DANGERS FROM YELLOW FEVER ALLEGED AGAINST THE PLANT STEAMSHIP LINE BETWEEN TAMPA AND HAVANA.

One of the most important questions of our Southern quarantine is, how to estimate the danger from Florida. What can we rely on as regards the means used against the importation of yellow fever from Havana? How much of known danger is being concealed from the public? Are the railroad and steamship authorities in honest accord with the officers of health in Florida and out of it?

We have just finished the perusal of a small pamphlet from Mr. H. S. Haines, Manager of the Plant Steamship Company, a regular mail service between Tampa and Havana. It is entitled a "Defense of the Plant Steamship Line, Against the Charge of Having Introduced Yellow Fever into Florida." Last August Dr. Holt, then President of the Louisiana Board of Health, made a positive declaration in the *Times-Democrat* of New Orleans "that the fearful distress which has come upon the people of Florida is the direct result of a combination of ignorance, selfishness and concealment: the ultimate consequence of a servile subordination to the interests of railroad and steamboat line."

The railroad and steamship line referred to are those known as the Plant System, managed by Mr. H. S. Haines. Mr. H. therefore brings forward indubitable evidence that the statements made by Dr. Holt are without foundation in fact. We have the pleasure of knowing personally both of the gentlemen in this controversy. Dr. Holt is an ardent, energetic and zealous man, who made a bold and successful fight in New Orleans for sanitary reform and got many of the things he fought for, but in the charges against the Plant Steamship Line as the importers of yellow fever we are forced to believe that he was betrayed into a warmer expression than a thorough examination of the facts would have warranted.

We have known Mr. Haines from his school-boy days, and if bravery in the time of need, a strict devotion to duty and a clear brain count for anything, he possesses all that is necessary to inspire confidence and carry conviction when he makes a statement. It comes to light by his pamphlet that he was not only not reckless in carelessly plying a commerce with Havana, the nest of yellow fever, but he personally superintended the construction of ships for this foreign trade with a full knowledge of the dangers, and with an intelligent determination to overcome all difficulties, seeing to it that the construction would facilitate ventilation and the cleansing of the bilges, in short, his company produced model ships, the like of which, if successfully imitated by vessels in all the trades, would reduce the dangers of imparting disease to its minimum. His statements are more than borne out by a committee composed of men of experience and integrity, with Dr. Neal Mitchell, of Jacksonville (a name familiar to thousands who watched the epidemic in Florida last year) as chairman, who made most thorough inspection of one of the ships, "The Mascotte," and says of these vessels "they are also marvels in the way of ventilation and improved sanitary arrangements."

We believe that Dr. Holt is a fair-minded man, who is willing to do justice to every one, and that he cannot read this presentation of the other side without withdrawing his very emphatic language.

Those of us interested in the quarantine of next summer, we believe, will be safe as far as the dangers from the Havana Steamship Line is concerned, and now let us turn our attention to the real causes. They are there somewhere in Florida, and some on can show the duly authorized authorities how they are, and then come the means of prevention. It is easy to stir up prejudices against corporations—and many times they are at fault—but those of us who are interested in the management of inland quarantine know that we have no such allies as the faithful railroad men.

Before we close we would just like to add that additional confidence is inspired in the South by the fact that Dr. D. M. Burgess, the admirable officer who was first made an inspector in Havana by the National Board of Health, is still at his post, and that no communication is held with the Havana ships and the shore at Havana except on his written permission.

DOCTORS ABUSING THEIR PRIVILEGES AND OPENLY VIOLATING THE LAW.

The *North Carolina Presbyterian* of the 27th February says: "To the shame of those most honorable professions, medicine and pharmacy, it is to be said that one of the chief difficulties in the way of temperance lies in the unworthy members of these guilds evading the local option laws. Doctors are guilty, it is reported, of sometimes even descending to regular liquor-selling, or doctors and druggists conspire to render the law nugatory. Our State Medical Society, we really believe, will be true to itself and revoke licenses of any physicians upon whom such outrageously dishonorable conduct can be proved. We sincerely hope the Society will inquire into these matters, for they do seriously affect the fair name of the profession."

In addition to the above we have heard that certain doctors, one of whom comes under the recent amendments of the medical law in a town under local prohibition rule, has wilfully given himself to writing prescriptions for whiskey, until the customers became so numerous he threw off the thin disguise of prescription-writing for drinks and sold whiskey openly. We agree with the *Presbyterian* that the Board of Medical Examiners should look into the matter, sift the facts and cancel the license of the offender if his defiance of the law is proven. Every license to practice medicine in this State is given upon the written endorsement by some reputable person of the moral character of the applicant, and the Board has a right to rescind this license when immoral charges are proven. We commend the subject to the initial inquiry of the Secretary of the Board while the evidence may be obtained.

THE PHARMACOPŒPIA CONVENTION OF 1890, AND THE COMMITTEE OF REVISION OF 1880.

It is now nearly ten years ago that the Pharmacopœia Convention of 1880 entrusted the work of revision and publication to twenty-five of its members.

For several decades previous to 1880 the United States Pharmacopœia was little known except through the United States and National Dispensatories, which were the commentaries on that work. True enough the establishment of the United States Pharmacopœia was a voluntary work, the expenses of which had been borne by its projectors, who unselfishly had done their work without so much as a nod of recognition from the general medical profession, and with but feeble aid from the pharmacal profession, therefore those of us who came in at a late day to weigh the shortcomings of this faithful handful of scientists should be willing to accord to them all the credit they deserve. Whatever may have been the defects and inadequacy of the Pharmacopœia up to the Convention of 1880, nothing contributed more to it than the indifference of those who ought to have been interested, and that the Committee of 1890, in rendering the account of their work had an empty treasury, is not surprising. It is not well now to rehearse the spirit which animated the Convention of 1880, for, like all reforms, to some, it had only the appearance, to use the slang phrase of the political orators, of "reforming the old Committee out, and reforming a new one in," with no higher motive than transferring the office of publication from Philadelphia to New York.

Subsequent events have shown that business motives alone did not rule the action of the Convention or of the Committee of Revision, for, as all candid persons must now admit, the work was begotten in a true scientific spirit, and thus pursued up to the very eve of the inauguration of the Convention of 1890.

It would not become the writer to speak in terms of unbounded praise of a work in which he had the honor of being associated, but for the well-known fact that the admirable work was largely done by the chemists and pharmacists who composed the Committee. The medical men who were of the Committee, it is true, bore an indispensable part, but so predominant is the work of the chemist and pharmacist that their work is scarcely perceptible. The writer, therefore, has no hesitation in saying that the Pharmacopœia of 1880 stands before the profession as an admirable piece of work, presenting for the first time a sufficiently ample scientific basis as to rank it with the best of its rivals in any country.

Finding the treasury empty, the present Committee set about replenishing its coffers, and by wise management has been able to pay for special investigations—of which there have been many—and will turn over to their successors a sufficiency of money to pursue investigations without delay, thus laying a foundation of such importance as can only properly be estimated by those who were obliged to work without money.

It was thought by the Committee of 1880 that a revision of the

Pharmacopœia would be needed in 1885, and the sharp eye of the learned and sagacious Chairman, Mr. Charles Rice, was ever open to the needs of the professions interested, and it was decided that no such revision was actually necessary, although many very important additions had been made to the list of drugs. At no time was the Committee idle. After the finished work had been placed before the professions in the handsome volume now so well known, under the active leadership of the Chairman, reviews, digests, criticisms were carefully made and read and weighed and recorded, until the Committee will be able to present to the Convention of 1890 not only the results of their labors in the Pharmacopœia, but a "Digest of Criticisms," which will enable the new Committee to compass at a glance all the defects of their work, and all the suggestions for improvement which have been made by doctors, therapeutists, pharmacists and chemists in every country.

Finally, the Committee of 1880 found an obscure publication, which its old friends were apparently willing to allow to remain obscure. They saw their opportunity, made good use of their time, organized their sub-committees thoroughly, devised ways and means for themselves and for their successors, produced a volume which was the exponent of the state of the chemistry, pharmacy and therapeutics of the date of its issue, spared no pains to obtain criticisms, corrections, amendments and objections, digested them in a substantial pamphlet for the assistance of their successors. It would be gross injustice to close this notice without giving credit to Mr. Charles Rice for the great ability he has shown in organizing and carrying out the work, for his varied learning and skill as a chemist, and, above all, for his patience and courtesy with his associates. The scientific may judge adversely about the work done, but we can say that no committee could have worked ten years more harmoniously than this, and that the friendships which have been formed between members of the Committee, in the opinion of the writer, are worth all the labor which has been put in it. The Convention of 1880 was opened by the Secretary, he being the only living representative of the Convention of 1870. We trust that the Committee of 1880 may meet in Washington in 1890 without any other breaks than the few sad ones which have already occurred.

REVIEWS AND BOOK NOTICES.

A Reference Hand-Book of the Medical Sciences, embracing the entire range of Scientific and Practical Medicine and Allied Science, by various writers. Illustrated by Chromo-lithographs and fine wood engravings. Edited by Albert H. Buck, M.D. Vol. VII. New York: Wm. Wood & Co., 56 & 58 La Fayette Place, 1889.

This work has so grown upon us during the issue of the several volumes, that we now wonder how we ever did without it. The industrious and able editor has drawn into this valuable collection vast knowlege some original, some compiled, but for the most part well digested, and in shape for ready reference. With the issue of each new volume we are tempted to believe it is the very best of all.

We cannot attempt even an outline of the subjects which are included in alphabetical order from *Teratology to Worms.* In the short time allotted us for its perusal we have hit upon the admirable description of *Thomsonianism and Perkinism,* from the graceful pen of Dr. John C. Peters. The accounts of the two "Systems" of cure, which once flourished and brought gold and fame to their founders, reads like a romance now, but they were once live issues and the impress of the "high-belia" and "low-belia" follies are still to be found in some rural localities. If we have as a result the addition to our materia medica list such articles as podophyllin and leptandrin resinoids, herbalism, the parent of eclecticism, has done some good.

The article entitled *Trades,* setting forth the injurious qualities of certain manufactures, brings together for physicians and sanitarians knowledge of peculiar value. Under this head is given a plan of an *Abattoir,* a subject to which our North Carolina sanitarians must turn their attention in the near future: the article is by S. A. Goldschmidt, Ph.D., Inspector of Offensive Trades of the New York Board of Health.

The *Transportation of Wounded,* by Dr. Albert L. Gihon, of the navy, is practical and well illustrated.

Tubercular disease and tuberculosis receives a full consideration, and a chromo-lithograph of the Tubercle Bacilli is transferred from Dr. Koch's work, "Die Ætiologie der Tuberculosë."

Urine, the chemistry of which substance is so practically pressed upon all practitioners at this day, is elaborated by Dr. R. F. Ruttan, lecturer in chemistry at McGill University, in 38 pages.

Vaccination, from the pen of Dr. S. W. Abbott, Secretary of the Massachusetts Board of Health, is quite an extensive document, and is a good resumé of the subject as at present developed, but he follows, unquestioning, some of the old theories which are now about to be abandoned, for which see the last volume of the Encyclopedia Britannica.

WATER, the analysis of which, is treated by Surgeon Charles Smart, of the Army, in a most admirable article. It ought to be distributed, in pamphlet form, to every Superintendent of Health in North Carolina as a text-book. We marked so many passages for quotation that we are compelled to omit all, and satisfy ourselves by asking every sanitarian to study for himself what Dr. Smart has taught so practically. We know of no person whose authority we rely upon as to the analysis of water as firmly as we do in his.

We close the volume with an appetite whetted for frequent reperusals, and if we thought there was a doctor in our State who does not subscribe t' the Reference Hand-Book, we would feel like writing him a personal letter.

ATLAS OF VENEREAL AND SKIN DISEASES. By Prince A. Morrow, A.M., M.D. New York: Wm. Wood & C., 1888.

The interest in American dermatology seems to have reached its high-water mark in the appearance of so many valuable specimens of portraits of venereal and skin diseases. In the work before us not only have the portfolios of American dermatologists been put under contribution, but the choice portraits of all Europe have been reproduced in an admirable manner. This atlas is issued in monthly parts and will be in 15 fasciculi at $2.00 each. The paper is fine, the text exquisitely printed, and the chromo-lithographic illustrations are of the very best quality. When completed this work will be a superb addition to the working volumes of the medical library, giving one the advantages of nearly all the fine pictures contained in Hebra's portfolio and many of Hutchinson's, together with the heretofore unpublished examples of pictorial skin portraits by the prolific American School.

It is easier to obtain a great work like this by installments than to make a large expenditure of $35 for the bound volume, and it gives the additional advantage of enabling one to enjoy and store away the easy lessons as they come to us.

THE YEAR BOOK OF TREATMENT FOR 1889. Being a Critical Review of the Practice of Medicine and Surgery During 1888. With 22 Contributors. Philadelphia: Lea Brothers & Co., 1889. Ph. 344.

Our readers are already familiar with Lea's Year Book, which has now been a few years before them. It gives us a fair and condensed and judicial resumé of the progress of medical treatment. Is it that foreign authors are more prolific of therapeutical resources, or must we consider that American therapeutics are not sufficiently scientific to attain to a majority? At any rate, not only in this, but a large majority of the abstracts of remedies are from foreigners.

The "Year Book" is reliable, as far as it goes, and is entirely free from "trash"; it is beautifully printed, is indexed by authors and subjects, and its price puts it within the reach of all.

CYCLOPEDIA OF DISEASES OF CHILDREN. Edited by John M. Keating, M.D.

Messrs. J. B. Lippincott & Co., Philadelphia, announce as nearly ready for publication a Cyclopedia of Diseases of Children, in four volumes, to be sold by subscription. The contents of the volumes, as itemized in their announcement, is full, and the names of many of the authors a substantial indication of what the work will be. The work is sold only by subscription. Send for an Announcement.

HAND-BOOK OF MATERIA MEDICA AND THERAPEUTICS. By Cuthbert Bowen, M.D., B.A. Philadelphia and London: F. A. Davis, 1888. [Price $1.40.]

This is a muslin-bound, small octavo, compiled for the use of medical students preparing for examination. It is conveniently arranged in the form of questions and answers, and, as far as we have examined it, it is accurate. A good "quiz" book is highly esteemed by the numerous candidates who annually throng the Board of Examiners, and this seems to fill that requirement.

POCKET MEDICAL FORMULARY, ARRANGED THERAPEUTICALLY. By Alexander Hazard, M.D. Revised and enlarged by Abraham S. Gerhard, A.M., M.D. With an Appendix. Second Edition. Philadelphia, Pa.: A. L. Hummel, M.D., Publisher, 224, South 16th St.

The doctor who wants to know what prescription to give his patient for a certain disease has only to know what is the matter with him, and by turning this indexed pocket-book he can get any number of prescriptions for it. Besides there are interleaved blank pages to add other favorite prescriptions. Many a docter will feel equipped who owns this volume.

INTERNATIONAL POCKET MEDICAL FORMULARY, WITH AN APPENDIX. By C. Sumner Witherstine, M.S., M.D. Philadelphia and London: F. A. Davis, Publisher, 1888. [Price $2.00.]

This is a larger and stouter volume on the same general plan as the one above noticed. In looking over these handy volumes one cannot help thinking that they are founded upon the plan that many a non-medical man (or, for short, *layman*) conceives all medical books written. What a boon such a condensed work would have been to poor Marion Sims when he was searching Eberle to get a good prescription for the sick babies in Lancaster, and there are many Marion Sims in our country in that stage of development.

'THE THREE ETHICAL CODES—American Medical Association, American Institute of Homœopathy, National Eclectic Medical Society,

In one compact muslin-covered book for 50 cents prepaid. Will our correspondents who have so often sent to us to know where they can get "The Code," note this. Address "The Illustrated Medical Journal Company," Detroit, Michigan.

ELEVENTH ANNUAL REPORT OF THE PRESBYTERIAN EYE AND EAR AND THROAT CHARITY HOSPITAL is the title of a neat pamphlet sent with compliments of Dr. Julian J. Chisolm. There were 5,425 eye cases treated in this most excellent charity besides the throat and ear cases. The professional work done in this institution is of the highest order, and the charity which is extended to the afflicted of all creeds is worthy of the highest commendation.

CORRESPONDENCE.

INTESTINAL HÆMORRHAGE IN PNEUMONIA.

Messrs. Editors North Carolina Medical Journal:

On Saturday, February 21, 1889, I was called to see Chlora L., colored, aged 22. I learned from her mother that on the night of the 19th she had a chill. At the time of my visit she had a temperature of 104° F., pulse 120, respiration 40 per minute, a very annoying cough, pain in chest and expectorating only tough phlegm.

On percussion I found dullness over half of right lung. Prescribed antipyrine, 5 grs., every two hours, till three doses were taken, then tincture aconite, 4 drops every three hours, with bran poultice and mustard to chest.

Sunday, 22d—Found temperature 105° F., pulse 126, respiration 40. At this visit her mother told me she had a profuse hæmorrhage from bowels at 7 o'clock on evening before, which weakened her considerably. Continued treatment and added sufficient pulvis ipecac et opii to relieve pain.

Monday, 22d—Found temperature 104.5° F., pulse 120, respiration 30. Continued treatment except to increase the number of drops of aconite and in place of antipyrine gave antipyretic dose of quinine.

At my next visit (Wednesday, 25th) I found temperature 99° F., pulse 90, respiration 20, pain all gone and expectoration easy and purulent in character. I now gave carb. amm., 5 grs., and tincture digitalis, 10 grs., every three hours, and tonic doses of quinine every four hours. I saw my patient twice afterwards and dismissed her well established on the road to convalescence.

The interesting feature in this case was the hæmorrhage. What caused it? There was no enlargement of either spleen or liver, no tympanitis or iliac tenderness. Whatever its cause, I believe it was congenial to my patient. Seldom does a case of pneumonia terminate so favorably, so soon, that commences so violently. Did not the hæmorrhage speak in favor of the old plan of treatment, viz: *bleeding.*

D. A. Staunton, M.D., Lexington, N. C.

SOME LIGHT ON DR. CAMPBELL'S CASES IN FEBRUARY JOURNAL.

Editors North Carolina Medical Journal:

In the February number of your JOURNAL Dr. J. R. Campbell relates two fatal cases and asks the opinion of the profession in regard to them. As I have very recently had a case very similar to them I will detail it, giving my diagnosis and treatment.

During the last week in February I dismissed the case of a young man aged 28 years, who had been very ill with acute cystitis. He had fever and loss of appetite during his attack. When convalescence set in his appetite improved very much, and on the morning of the 3d of March he ate some oysters for breakfast, which disagreed with him. He ate dinner, which added to the digestive trouble. About 11 p. m. he was taken with pain in the right hypochondriacal and umbilical regions, which steadily grew worse. His mother gave him a dose of tr. opii and soda, and used hot poultices at the seat of the pain. He became more quiet and I gave him 3 c. c. pills. I directed his mother to give morphine, ⅛ gr., "*pro re-nata,*" and to servo spiritus ammoniæ aromaticus for the nausea. I returned on the morning of the 5th and found that he had suffered all night and had vomited everything taken. I noticed that there was no bile in the ejected matter, though there was constant nausea; made inquiry and found he had vomited no bile. I became satisfied that the whole trouble was due to spasm of the duodenum, causing a retention of the secretions of the liver and pancreas. I attributed the pain that passed across to the left side to the retention of the pancreatic secretion. I had used as much morphine as I thought was safe with no perceptible benefit. So I decided to put him thoroughly under the influence of belladonna and see if I could not produce a relaxation of the circular fibers of the muscles of the duodenum.

Owing to the persistent vomiting I did not succeed in getting the physiological effect of the drug until 10 or 11 p. m., though I gave large and repeated doses of it. During the night he became somewhat delirious from it. Soon after the delirium set in he vomited a large quantity of very visid bile, and in it was an oyster apparently as whole and sound as when it was swallowed. Immediately after the discharge of bile the pain in the hepatic and pancreatic regions subsided.

I now gave 10 grs. calomel, which acted about daylight, and in the action were more oysters. After the action from the calomel there was no more abdominal pain, but the kidneys and bladder became very troublesome owing to the intensely acid urine. The next morning the urine was very bloody and micturition very frequent and scant. I put him on large doses of bicarbonate potash well diluted and fl. ex. belladonna. The trouble with the urinary organs yielded very kindly to treatment, and he is to-day (March 9) able to be up, and is convalescing nicely. I have used the belladonna in a similar case once before this. In the case of a child who had eaten a large quantity of green ground-peas, which caused spasm of the duodenum, I had failed to stop the vomiting, relieve the pain or move the bowels until I got it under the influence of belladonna, when a dose of calomel and large stimulating enema did their work by removing a large quantity of ground-peas, a good many of which had been swallowed whole.

I think the trouble in Dr. Campbell's case was spasm of the duodenum and retention of its contents. Death being caused by gangrene and rupture, or paralysis of the heart, from the interference by the duodenal spasm with that inexplicable nervous system of man—the sympathetic.

Very respectfully,

J. L. Napier, Blenheim, S. C.

The Amenities of Southern Journalism.—The *New Orleans Medical and Surgical Journal* needs no commendation from us, but we cannot let the occasion pass without saying that the courteousness of its rebuke, and its self-possession when defending its position excites our admiration, and this remark is called forth by many editorials, but especially the one in the issue of December (p. 469), in replying to a contemporary. The *New Orleans Medical and Surgical* is always read with pleasure by us, and we can truly say we always arise from its perusal with profit. True independence of spirit, begotten of a fixed purpose, and breadth of culture in medicine and the collaterals, as well as in the art polemic, stamp this journal with the highest dignity attainable in such work.

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FREDERIC R. STURGIS, M. D., Professor of Diseases of the Genito-Urinary Organs, and of Venereal Diseases; Surgeon to the Charity Hospital.

THOMAS E. SATTERTHWAITE, M. D., Professor of Pathology and General Medicine; Pathologist to the Presbyterian Hospital.

CHARLES L. DANA, M. D., Professor of Diseases of the Mind and Nervous System; Professor of Physiology, Women's Medical College, Physician to Bellevue Hospital.

ANDREW H. SMITH, M. D., Professor of Clinical Medicine and Therapeutics; Physician to the Presbyterian Hospital; Consulting Physician to the Orthopædic Hospital.

WILLIAM OLIVER MOORE, M. D., Professor of Diseases of the Eye and Ear; Professor of Diseases of the Eye and Ear, University of Vermont, and Woman's Medical College, New York.

BACHE McE. EMMET, M. D., Professor of the Diseases of Women; Assistant Surgeon to the New York State Women's Hospital.

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AMBROSE L. RANNEY, M. D., Professor of the Anatomy and Physiology of the Nervous System; Professor of Diseases of the Mind and the Nervous System, University of Vermont.

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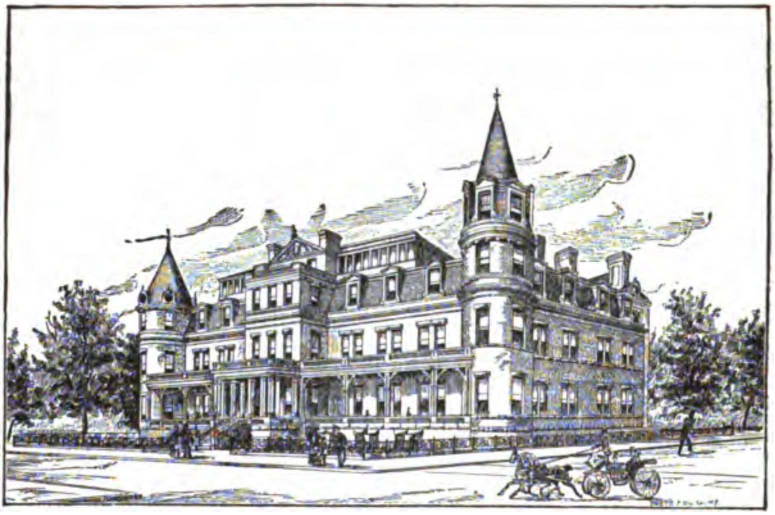
PETER A. CALLAN, M. D., Professor of Diseases of the Eye; Surgeon to the New York Eye and Ear Infirmary.

JOSEPH O'DWYER, M. D., Professor of Diseases of Children.

This School was founded by members of the Post-Graduate Faculty of the University of the City of New York, and was the first institution in the United States to present a systematic system of clinical instruction for graduates in medicine.

All the lectures are clinical. It is a place of instruction in which the practitioner, by actually handling the cases under the guidance of the professors and instructors, may learn the use of instruments for examination and treatment, and observe the effects of remedies. Its facilities are unrivaled. Each hospital to which the teachers are attached forms a part of the field of instruction. The general schedule is so arranged that there is no conflict in the hours of attendance of the professors. The clinics begin at 9. A. M. and continue until 9 P. M. each day; and the *Clinical Society of the School* meets twice a month on Saturday evenings. A Dispensary and a Hospital form part of the School, with one ward exclusively for Infants, which has been lately endowed by benevolent ladies of New York City. Dr.



Dr. William A. Hammond's Sanitarium

—FOR—

DISEASES OF THE NERVOUS SYSTEM,

WASHINGTON, D. C.

Dr. William A. Hammond announces to the medical profession that he has returned from New York to Washington, D. C., where he has established, in a building especially erected for the purpose, a ***Sanitarium*** for the treatment of mild and curable cases of mental derangement, diseases of the nervous system generally, cases of the morphia and chloral habits, and such other affections as may properly be treated by the remedial agencies under his control. His experience during many years has convinced him that most diseases embraced within the above-named classes can be managed much more successfully in an institution of this kind, under the constant supervision of the physician and with the aid of means not otherwise at command, than when the patients are seen by their medical advisers at intervals of several hours or days.

The ***Sanitarium***, which has been constructed under the superintendence of A. B. Mullett, Esq., late architect of the United States Treasury department, and is situated on Columbia Heights, at the corner of Fourteenth Street and Sheridan Avenue. The position is the highest in the immediate vicinity of Washington, the soil is dry, and all the surroundings are free from noxious influences. It is readily reached by the Fourteenth Street Railway, the cars of which run to the doors. The building is very large, and as perfect in structure and arrangements as is possible from a knowledge of sanitary science and of the requirements of such an institution. It accommodates about thirty patients. So far as the rooms, table, etc., are concerned, they are equal to such as as exist in the best hotels of our large cities. Electricity in all its forms, baths, douches, massage, inhalations, nursing, etc., are provided as may be required by patients, in addition to such other medical treatment as may be deemed advisable.

A large ***Solarium*** for sun-baths and exercise in cold or inclement weather and heated with steam in winter is constructed on the top of the main building.

Each patient is thoroughly examined by Dr. Hammond and receives his daily personal attention, while Dr. E. L. Tompkins, a physician of ample hospital experience and of tried executive ability, resides in the institution, and has, under Dr. Hammond, the immediate superintendence.

The ***Sanitarium*** is now open for the reception of patients.

For further information Dr. Hammond can be addressed at The Sanitarium, Fourteenth Street and

CURRENT LITERATURE.

THE PASTEUR TREATMENT OF RABIES.

Mr. Victor Horsley gives in the *British Medical Journal* some very common-sense remarks on Pasteur's method of treating rabies and the means of detecting it in suspected cases. Such an amount of doubtful statements have been made about Pasteur's method and the results, that careful readers have come to the conclusion to wait for information from competent witnesses. What Mr. Horsley writes reads like the statements of a practical and prudent man, and we will rejoice if it is true. He believes the cause of rabies to be virus, and that virus is a microbe. It is transmissible from one living animal to another. Drying kills the virus, and it is fortunate, as the saliva of a rabid dog dropped on the streets would be a great danger. It attacks all young animals, but reaches its intensity in the cat and wolf. The incubation period of the disease is most important. He put it at its shortest time, 6 to 8 days, if the inoculation be subdural; 8 to 9 days is also not infrequent. The mean for subcutaneous inoculation in through bites received in the street is 6 weeks. The maximum of incubation actually appears to be in some cases as much as two years.

The symptoms of rabies vary in degree in different animals, but may be stated as follows: 1. Mental disturbance (excitement, delusions); 2 Hyperesthesia, spasms; 3. Hebetude with mania and melancholia; 4. Paralysis. Death customarily followed by syncope or coma. Clinically speaking the disease assumes an explosive and a paralytic form.

The Death-rate.—The death-rate of persons bitten by dogs of known rabidity is 15 p. c.; this is established by the investigation of three distinct and independent observers. Leblanc, in 1873, found the ratio to be 14 p. c.; Dujardin-Beaumetz, 15.90 p. c.; Mr. V. Horsley 16.6 p. c.

Pasteur from the first regarded the virus as a microbe; he considered that we would be able to secure the waste products of its metabolic processes, and then these waste products might be injected in sufficient quantity to check their progress. He subjected portions of the spinal cord to the combined action of heat and drying. By inoculation he discovered the rate of the loss of virulency according to the heat employed. His experiments led him to the adoption of the "Mild" and the "Intensive Treatment." By the mild treatment of 1886 the per cent. was in Odessa 3.39 and in Warsaw 4.1; and for the "Intensive Treatment" in Odessa 0.64 p. c., and Warsaw 0 p. c., this figure representing the result of 16 months work and 30 individuals bitten in the face, and 4 by wolves. (The latter the most virulent of rabic poison.)

Means of Recognizing the Disease in Suspicious Cases.—He refers readers to text-books describing rabies in the living animal, and goes on to give post-mortem appearances, which consist in early congestion in the central nervous system, followed later by exudation of leucocytes into perivascular lymphatics and interstitial neuroglia.

Hæmorrhages also are frequent. There is congestion of the laryngeal mucous membrane, frequently patches of broncho-pneumonia. The tongue is furred and dry; pharynx congested especially at the root of the tongue. Stomach congested; hæmorrhages especially in cardiac end of stomach. Contents, coffee ground material and foreign bodies. Bladder distended in paralytic stage.

The method of inoculation to prove the presence of rabies is most valuable. The method is as follows: About two inches of the upper cervical region of the spinal cord is removed as soon as possible after death, and placed in 10 p. c. solution of glycerine and water. When it is convenient to inoculate, a piece of the cord is washed in recently boiled distilled water, then crushed in a glass mortar in *bouillon*, and injected subdurally through a very small trephine opening. The whole operation can be performed in a few minutes under local anæsthesia, produced by a 5 p. c. solution carbolic acid. The most suitable test animals are rabbits, since the disease in them assumes the paralytic form. As a rule the first symptoms occur on the 14th day, after which the animal commonly dies in four days. He keeps the animals inoculated for three months under observation.

CREASOTE IN PHTHISIS PULMONALIS.

Dr. Beverly Robinson, in *American Journal of Medical Sciences*, January, 1889, writes with such confidence of the employment of creasote that it must surely awaken hope in the consumptive and arrest the attention of the doctors who have much to do with the disease.

Its use dates back to 1830. It then fell into disuse until 1877. At that date it was revived by Drs. Bouchard and Gimbert. Shortly after their published observations Dr. Robinson began its use, and delivered a clinical lecture on it at the Bellevue Hospital Medical College. At that time he regarded it only as a good anti-catarrhal agent. From 1878 to 1885, when Jaccoud's book on the "Curability of Phthisis" came out, Dr. Robinson prescribed creasote very frequently in pulmonary phthisis.

Dr. Robinson calls attention to his observation that there is very little pure creasote for sale by druggists. Most of the drug dispensed as creasote is simply crude carbolic acid, obtained from distilling coal tar. It has neither the color, the odor nor the chemical properties of *wood* creasote, or, what is preferable, of the creasote which is obtained from the distillation of beechwood-tar. The drug made by Morson & Son, of England, Dr. R. considers absolutely pure.

When creasote is prescribed it should be taken in small or moderate doses. These doses should be continued a long while or only gradually increased. Too large doses interfere with the stomach and make it necessary to abandon it. The daily amount prescribed for adults has varied from 3 to 6 minims, and continued frequently many months without increase or interruption, or any evidence of intolerance. The ordinary dose of one-half minim is repeated every two or three hours:

℞.—Creasote (beechwood)........................ ♏vj.
Glycerinæ................................ ℥j.
Spts. frumenti............................ ℥ij.
M. S. As directed.

The dose is a teaspoonful diluted with water every 3 hours.

In a large proportion of the cases he finds it necessary to use it also by inhalation. He uses the following: 1. A combination of iodoform, grs. 24, creasote m. 4, eucalyptus m. 8, chloroform 48, and alcohol and ether, each, ½ oz.—seemingly a somewhat formidable mixture, in view of its numerous constituents, but a very rational one when explained in detail. These antiseptic inhalations were used by means of the perforated zinc inhaler.

We will not attempt to follow the analysis of 161 cases treated with creasote except to say that the impression made is that of an observer who expresses himself in moderate terms. Some concluding remarks we quote.

There is a fair amount of evidence to show that by its long-continued judicious use, it may and will modify favorably the local changes in pulmonary phthisis. He does not know whether or not it has any anti-bacillary action when given internally or by inhalation, but he gives preference to the combined modes of administration. It is unobjectionable from any point of view, is easy of administration, is adapted to the majority of cases, and it may be used with some advantage in all stages. Dr. Robinson, in conclusion, quotes the wise words of Dujardin-Beaumetz:

"There do not exist several medications of phthisis; there is but one, that which addresses itself to the nutrition; the others are only adjunct methods, which become dangerous if they succeed in affecting unfavorably a single day, a single instant, the digestive functions."

"THE BEST TWENTY-FIVE REMEDIES."

The New York *Medical Record* gives the following as the best 25 remedies which have been suggested to that journal: 1, opium; 2, mercury; 3, iodides; 4, quinine; 5, chloroform; 6, ether; 7, sulphate magnesia; 8, salicylic acid; 9, aloes; 10, alcohol; 11, bromides; 12, iron; 13, chloral; 14, castor oil; 15, digitalis; 16, arsenic; 17, colchicum; 18, ipecac; 19, aconite; 20, strychnia; 21, cocaine; 22, ergot; 23, bicarbonate potash; 24, mineral acids; 25, nitrites.

The *Record* gives the above as the minimum number, "and that the bumptious heretics who, in days of old, claimed that three drugs—opium, mercury and potash were enough, knew neither the science nor the practice of medicine."

The list seems to us a good one, but if the medicines are given in the order of their value it shows what a change has come over the doctors in New York in regard to mercury and chloroform. With the above list, we believe, if a doctor understood something of pharmacy, he could accomplish all the medication within the range of our knowledge of therapeutics.

If the supply was intended for the use of the writer, he could dispense with chloral, castor oil and aconite, and add bicarbonate soda, calcined magnesia, rhubarb, cascara sagrada and acetanilid, not as substitutes for the eliminated articles, but to suit certain therapeutic practices.

There is many a country doctor who carries not more than one-half of the above articles to the bed-side, and is esteemed a properly furnished doctor. Is it not true that one can almost get at the age of the doctor by scanning the prescriptions he writes in one day? Do we not all find ourselves substituting single bullets for the handfull of mustard-seed-shot prescriptions of our earlier days? Substituting harder work in diagnosis for the showier feats in pharmacy?

The old proverb is, "Beware of a man of one book." Our experience makes us beware of a man of one remedy, for we knew a "new issue" medical officer in the "late unpleasantness" to keep a "sick list" waiting outside his tent while he rummaged the medicine-chest for Worthington's Cholera Drops.

MERCURIAL INUNCTION IN TYPHOID FEVER.

Three years ago a short account was given of a method of treating typhoid fever which Dr. Kalb, of Thalmässing, had found very successful in 100 cases in which he had tried it. In 80 per cent. of the cases fever had entirely disappeared within ten days. The treatment consisted of rubbing 1 gramme (15 grs.) of mercurial ointment into the abdomen on the first day, into the inner aspect of one thigh on the second day, and on the third day into the other thigh. The course was repeated during the three following days. Dr. Kalb also gave alcohol methodically and a few calomel and opium pills on the first day. Dr. Felix Bartlett has published a short paper in the *Australasian Medical Gazette* November, 1888, in which he confirms Dr. Kalb's statement. He found that the temperature fell to normal in two or three days, and that in five or six days from the commencement of the treatment all other symptoms had disappeared. Both Dr. Kalb and Dr. Bartlett agree also in stating that the treatment by inunction is only of use when commenced before the ninth or tenth day of the disease. And as this is a period when the symptoms are not very distinctive, it is possible that in some instances the cases submitted to this treatment were only febricula. The history of one family given by Dr. Bartlett is of special value as affording evidence generally so difficult to obtain on this head. He says: "In one house a child of four first fell ill. She was not seen by me until the end of the second week. She had a very severe attack and narrowly escaped with her life.

Whilst I was attending upon this case the mother, who was nursing the child, and also two elder children who were in the house, showed undoubted symptoms of enteric fever, with considerable rise of temperature. All three were put under this treatment at once. The symptoms rapidly disappeared, and none of them were in bed more than five or six days. The father next fell in with precisely the same symptoms, but having to go away on urgent business, refused all treatment. He, however, returned in a few days with the symptoms fully developed, and he ultimately died of the disease. Two servant girls in the house also suffered, but neither said anything about her symptoms until in the third week; one had an ordinary attack, the other a severe one, but both ultimately recovered." In another house, where also the first sufferer was a child, "the mother and the servant both developed decided symptoms, but, being put under treatment, were convalescent in a few days." Dr. Kalb was more cautious in speaking of the early complete recovery of his patients; he found that the spleen remained enlarged for about a fortnight after the fall of temperature, and advised that the patients should be kept under strict observation during this time for fear of a relapse. It may be useful to recall here that calomel has been lately used in Germany in the treatment of typhoid fever. Liebermeister has given some striking statistics on this point. He gives the results of 839 cases; 239 were treated with iodine, 223 with calomel and 377 with neither, the rest of the treatment being exactly alike in all, and consisting in the employment of a partial antipyretic method. Of the cases treated with iodine (35 or 14) 6 per cent. died; of those treated with calomel (26 or 11) 7 per cent. died.—*British Medical Journal.*

THE MEETING OF THE MEDICAL SOCIETY OF NORTH CAROLINA AT ELIZABETH CITY.

On the *third* (3d) *Tuesday of April*, the 16th, the Medical Society of North Carolina will meet in regular annual session.

It is desirable that all persons having papers to read will make it known to Dr. Julian M. Baker, Secretary, at Tarborough, at once.

At the same place the **Board of Examiners** will meet on the 15th of April, remaining in session as many days as will be required to examine all applicants presenting themselves. The examinations will be in writing as well as orally, and 70 per cent. of correct answers is expected of every candidate.

The North Carolina Board of Health will have a session conjointly with the Medical Society on the afternoon of the 2d day, or such other place on the programme as can be most conveniently accorded them.

It is usual for railroads and steamboats to issue tickets for one rate and a third, by buying an excursion ticket at the place of departure, and we presume the Secretary will attend to the correspondence on this subject at once.

We are not able to state the character of hotel accommodations, or the price per day, but believe it will be generally satisfactory.

Elizabeth City will be difficult of access to many of the members of the Society, but with the rapidity of travel much of this objection is overcome.

We bespeak Wilmington as the place of meeting in 1890. It has been a custom of the Society to meet every ten years in Wilmington, and we trust it will be the pleasure of the members to select our town for the next meeting. We have been looking forward to it with much pleasure, and we believe it can be made pleasant and profitable to all to be with us.

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Surgeon General John B. Hamilton has resigned his position as editor of "*The Journal of the American Medical Association.*" A new amendment of the law makes it possible for him to have a life tenure of the office of Surgeon General M. H. S.

THE MONTGOMERY QUARANTINE CONFERENCE.

MONTGOMERY, ALA., March 7, 1889.

Last November the Legislature of Alabama passed a joint resolution directing Governor Seay to call a Conference in the city of Montgomery of all the Southern States and those of the Mississippi Valley. This call was not made public until later in December, when Dr. C. P. Wilkinson, President of the Louisiana Board of Health issued a "call" for a similar Conference to be held in Jacksonville, Fla. Dr. Wilkinson gave way to the call of the Governor of Alabama, but, judging by the knowledge of the situation we now have, I think it would have been better had the Conference assembled in Jacksonville. It must not be inferred that the Conference in Montgomery failed to accomplish good work, for I am prepared to show that it did, but that a Conference held in Jacksonville would have been the free and untrammelled assemblage, the material, prepared in advance, would have been contributed by more of the thinking men who took part in the meeting. Upon Dr. Jerome Cochran, of Montgomery, devolved the duty of preparing a working programme of the Conference. Dr. Cochran is a physician of high standing, one who has been identified with the management of many epidemics of yellow fever, and a gentleman who is honored for truthfulness of purpose and absence of sham of all sorts. His qualities, however, were not versatile enough to cover the rare ability of organizing a body like the one assembled and of setting it to work. On the arrival of the delegates, who came in large numbers by the converging lines which meet in Montgomery, there was no programme and no completed machinery. The printed "Propositions to be Submitted to the Quarantine Conference" were not placed in the hands of delegates until late in the morning session, due, we ascertained, to the breaking down of the press.

Very promptly on the morning of the 5th March a very creditable number of delegates were assembled in the House of Representatives of the beautiful Capital. There were ten States represented on the first day, and while the medical element predominated, there were many representatives of the long railroad lines, lawyers, engineers, chemists and men of various avocations. I have been in many sanitary conventions, but have never seen one where there was so much impatience shown towards set papers. It was known that Dr. Victor C. Vaughan, Professor of Chemistry, of Ann Arbor, Michigan, was there to give one of his very able and entertaining lectures on the Ptomaines and their relation to disease. Dr. Vaughan is from North Carolina stock. His father was born near Chapel Hill, and moved to Michigan before Dr. V. was born. Dr. Van Bibber, a distinguished member of the Baltimore faculty, an amiable old gentleman, was there, and it was known that he had a paper on some subject bearing upon yellow fever and quarantine, but largely of a literary character. Dr. George M. Sternberg was there, the master bacteriologist of the world, shall I say?—well, I will say it, because it will not be long before such will be his acknowledged position. With that modesty and simplicity characteristic of all true scientists, he impressed every one with confidence in the rectitude of his methods, except, perhaps, the young or old sciolists, who, in all the vanity of their first exploits with the microscope, showed their itch to corner the master by asking questions which exhibited their own ignorance. One gentleman of that exceedingly versatile American type, who could put a tire on a wheel, lay off a railroad, mend an electric battery, set a leg, invent an astronomical theory that would pass for science in the *Scientific American*, propounded the astonishing question, "What is that integument which invests the mass of black vomit." The questioner had the air of a man who was confident he had his learned adversary in a corner, but he received the reply, which caused a modified snicker, "I think the gentleman will find it to be mucus." The same versatile delegate sought to astonish the writer by saying that he wanted to ask Dr. Sternberg if he had ever watched the white corpuscles of the blood eating up the red corpuscles, intimating that his discovery would greatly advance science, but he did not care to put Dr. Sternberg in such a position as to acknowledge his ignorance. It was known that all these distinguished and interesting gentlemen were there, but at the risk of being discourteous to Alabama's invited guests, the Conference went immediately to practical matters.

Dr. John H. Rauch, the well-known Secretary of the Illinois Board of Health, was called to the chair and a committee announced to outline rules of business and to select permanent officers. This resulted in the selection of Dr. C. P. Wilkinson, of New Orleans, as President, in acknowledgment of his having yielded to Alabama in calling a Conference. Dr. W. is a young man, full of vigor, a master of the subjects which his State has entrusted him with, and presided with ability, showing his knowledge of men as well as of the objects of a scientific body. North Carolina was honored in the selection of a vice-president in the person of Dr. R. F. Gray, of Winston, and in that of Mr. J. L. Ludlow, of the North Carolina Board of Health, as one of the Secretaries.

A Committee on Business was selected, one from each State, and the Government services represented, taking the topics submitted by Dr. John B. Hamilton, Surgeon General Marine Hospital Service, as a basis, were taken up seriatim in the afternoon and night sessions.

Col. Clark, vice-president of the Mobile & Ohio Railroad, submitted a paper containing propositions upon the transportation of freight and passengers during an epidemic. This was referred to a Committee on Quarantine, composed of one member from each State represented. The Conference then had two committees working on similar subjects, and succeeded in agreeing upon plans and opinions which the bodies were enabled to harmonize. The whole outcome of the work was, therefore, set forth in the form of definite opinions as to practice which should be adopted in the time of the outbreak of yellow fever.

The following expression of the opinion of the Conference is an example of the highly conservative nature of the utterances of this body:

RESTRICTIONS AS TO PASSENGERS AND FREIGHT IN TIME OF YELLOW FEVER.

The following restrictions were proposed by Dr. Cochran and adopted:

"During the prevalence of yellow fever epidemics passengers and freight should be brought from infected localities only under such regulations and restrictions as may be established by the health authorities along the lines of the roads concerned.

"The regulations and restrictions governing railroad transportation during yellow fever epidemics should be of such character as to afford all reasonable guarantees of protection to the communities in danger of invasion by the disease, but should not be more onerous than the circumstances warrant, and should be framed with due consideration of the extent and the danger in each particular case, and as affected by latitude and seasons of the year, and other qualifying conditions.

"At all seasons of the year, and under all circumstances, the simple passage of railroad trains should be allowed, without obstruction, even when carrying sick refugees from infected places to healthy localities willing to receive them."

You would not have room to print all the propositions which are intended to cover every possible difficulty which may occur in the course of an epidemic, but I must give you one other. In answer to the question, "On the occurrence of a case of yellow fever, what immediate measures of isolation are desirable." Answer by Dr. Cochran, adopted by the Conference :

"When one case or a few cases of yellow fever occur in any community, it does not follow of necessity that the disease must spread and become epidemic. On the contrary, the experience of many countries through long periods of time shows conclusively that in the majority of such instances, and without the observance of any special measures of prophylaxis, the disease fails to spread.

"When one case or a few cases of yellow fever occur in any community, in the light of our present knowledge of the habits and modes of propagation of the disease, it is generally possible, by the employment of the proper prophylactic measures, to prevent the development of an epidemic.

"The golden rule for the prevention of the spread of yellow fever is non-intercourse—isolation—the keeping of the well away from the sick, away from the infected things, and very specially away from infected localities.

"In the enforcement of this golden rule of non-intercourse two problems present themselves for solution. (a) To keep the people generally from coming into the infected houses and the infected localities; and (b) to keep doctors and nurses and other attendants and the well members of sick families from visting and mingling with people outside of the infected houses and localities. The solution of the first of these problems is comparatively easy. The solution of the second is sufficiently difficult. But it is possible to solve them both.

"In the densely settled sections of cities guards may be useful for the enforcement of non-intercourse. They are much less needed in sparsely settled towns. In villages and county neighborhoods, as a rule, they are not needed at all. In all cases every intelligent family should be able to take care of itself—should be able to keep all of its members away from infected houses and localities, and to guard its own premises from invasion by dangerous persons and things.

"Non-intercourse may be practiced in the very centre of an infected district with considerable probability of escaping the fever. Cloistered convents and prisons in infected cities, with yellow fever raging all around them, usually escape invasion; and there are numerous instances on record in which private families in the midst of epidemics have passed the ordeal safely by the vigorous enforcement of non-intercourse."

The paper read by Dr. Wilkinson on the first day was descriptive of the admirable system of disinfection adopted at the New Orleans quarantine station. Dr. W. showed in what respect they had improved the work done there, and it was the sense of the meeting that his report be adopted as the best direction for the establishment of similar stations. Dr. Hamilton, Surgeon General M. H. S., stated that it was the plan to be adopted at all the stations under his control, and Dr. Wilkinson informed your correspondent that he would be able to furnish him with plans and directions for a complete outfit to fall within the limit of the appropriation expected from the North Carolina Legislature for the station at the mouth of the Cape Fear.*

The results of the Quarantine Conference are all of a practical character, and when formulated will prove to be a good business basis for the management of yellow fever epidemics.

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*Since the above was written it turns out that the State gave no money at all to the building of a quarantine station, while it was liberal enough to give $5,000 for a military encampment, thus jeopardizing the health and commerce of the largest town in the State and a large back country tributary to it.

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THE MEDICAL SOCIETY OF NORTH CAROLINA will hold its 36th Annual Session on the 16th day of April at Elizabeth City. It will be noted that this meeting is in April, instead of May, as formerly.

THE PASTEUR INSTITUTE — RESEARCHES ON THE BACTERIUM OF DIPHTHERIA AND ITS SOLUBLE POISON.

Dr. Roix, one of the Directors of the Pasteur Institute, and his fellow-worker, Dr. Yersin, announces that they believe that they have identified the microbe of diphtheria. The reports of their prolonged study of the diseases are published in the *Annales de l'Institut Pasteur*, Nos. 11 and 12, 1888. Their conclusions are very interesting, and they have arrived at results which have somewhat suddenly attracted the attention of the lay press.

Among the most interesting of their conclusions is that this microbe acts by secreting a soluble poison, and they have shown that the injection into animals of various doses of this soluble poison produces the divers forms of diphtheretic poisoning; death may be produced in a few hours or after a more or less long period; paralysis which may end fatally or may be recovered from can be produced according to the amount of the injections. As the authors remark, these tardy manifestations are of particular importance; for if at a future time the soluble matters elaborated by the microbes are employed for a prophylactic purpose, it will be necessary not to lose sight of the possibility of these late symptoms. If such vaccines are used it will not be sufficient to ascertain that there is immediate tolerance, but also to guard against the production of the later and delayed effects. It will be necessary to prove in each case, with as much care as for vaccination by living virus, the harmlessness of chemical vaccination.

Some trials made by M. Roux, says a writer on this subject in the *Journal des Connaissances Medicales*, prove that even after a very long time the soluble products of anthrax do not cause any affection in the animals in which they have been injected, but it does not seem to be so either in diphtheria, or, as Charrin has demonstrated, in the disease caused by the pyocyanic bacillus.

The future, say Messrs. Roux and Yersin, will show, perhaps, that numerous organic affections, of which the cause is not at present clear, are due to delayed actions of this kind. Perhaps, they add, it will be necessary to attribute these effects to many forms of nephritis, and of other diseased conditions of which the true origin is at present unknown.

The next question to which MM. Roux and Yersin address themselves is as to the nature of the poison, whether an alkaloid or a ferment. The activity of the toxic matter is much diminished by heat; for example, two cubic centimetres of a certain fluid when injected under the skin, kill a rabbit; but even when injected into the veins in the dose of 35 cubic centimetres, this solution, if it has been previously heated up to a temperature of 100° C. for ten minutes, produces no symptoms. The injection of one cubic centimetre of a filtered fluid cultivation, heated for two hours in a closed tube at a temperature of 58° C., killed a guinea-pig after a long period; after two hours' heating it caused, in the same dose, a little œdema at the point of injection without producing death. The same liquid, not heated, killed guinea-pigs in the dose of one-fifth of a cubic centimetre. When in contact with air, the diphtheritic poison appears to lose its toxic properties quickly, but preserves them for a long time when sheltered from air and light in a closed vessel. The microbe is best filtered off through porcelain, and its toxic properties are by this method least impaired. The authors consider that these properties show that the poison is allied to ferments.

As to the question whether it is possible to produce immunity in animals, the authors state that researches now in progress promise an affirmative answer to this question. The authors state that their experiments lead them to believe that the most important prophylactic measure is careful treatment of the sore throat of measles and of scarlatina. The mouth and pharynx should be carefully cleaned with carbolic acid, which is the most efficacious agent against diphtheria.

M. Pasteur, it is reported, entertains the hope that these important researches will be the foundation of others which will permit us to attain to a more perfect knowledge of this terrible affection, and to combat it with greater success.—*British Medical Journal.*

S. Weir Mitchell, M.D., LL.D., has been elected Professor of Diseases of the Mind and Nervous System in the Philadelphia Polyclinic and College for Graduates in Medicine, an additional Chair upon that subject being created.

MEDICAL SOCIETY.

Materia Naturæ More Important than Materia Medica.

Dr. J. W. McNeill, of Fayetteville, leader of the general subject for debate, has announced his subject, "*The Study of Materia Naturæ More Important than the Study of Materia Medica.* Upoon this subject will be founded the field debate. It surely ought to bring out the warmest discussion.

NOTES.

Dr. M. Bolton, of Rich Square, was by error left out of the list of members present at the Fayetteville meeting. We fear there are several errors in this list, and will take pleasure in correcting them.

The Quarantine Conference at Montgomery.—Thirteen States sent delegates to the Montgomery Conference. Of the seventy odd commissioned by the Governor of North Carolina ("without compensation") seven were on hand to demonstrate their patriotism.

A Medical College in North Carolina.—Notice.—Notice is hereby given that application will be made to the Legislature of North Carolina for a charter incorporating the Western North Carolina Medical College.

J. A. Watson, M.D.,
S. W. Battle, M.D.,
F. T. Merriwether, M.D.,
And Others.

[The above clipping was sent us some days ago, but we have not heard what luck the bill had in the General Assembly.]

The Journal of Cutaneous and Genito Urinary Diseases.—This Journal has changed publishers, and has put on a more vigorous life. The last year or so there was some lack of life, and seemed rather to be dwindling. It is a favorite journal at this office, and we wish the editors, Drs. Morrow and Fordyce, increasing success. The present number is all that could be desired typographically and scientifically, and if sustained after this lead, its circulation will greatly increase.

DEATH OF DR. J. C. DALTON.—Dr. J. C. Dalton, the well-known physiologist, died in New York, February 12th, of disease of the kidneys, at 64 years of age. He was, at the time of his death, a member of the National Academy of Sciences, and President of the College of Physicians and Surgeons of New York. His original work will survive him, and will probably rate, in the years to come, as being the most substantial of all the contributions to physiology by an American.

SYPHILIS INCURABLE.—W. R. Gowers, M.D., F.R.S., in his recent Lettsomian Lecture (*British Medical Journal*), says: "There is no real evidence that the disease ever is or ever has been cured, the word disease being used here to designate that which causes the various manifestations of the malady. The statement that "syphilis is an incurable disease" is the shortest way of stating this fact, and it is legitimate if we recognize that "by incurable" merely we mean that there is no proof of cure.

DEATH OF DR. JAMES L. MANNEY.—Dr. James L. Manney, son of Dr. James Manney, aged 62 years, died March 18th, 1889, from the effects of nervous prostration following apoplexy. Dr. Manney was a member of the State Medical Society, President of the County Medical Society, Senior Warden of St. Paul's church and Superintendent of the Sunday School of the same. He was faithful in the discharge of all his duties and greatly beloved by the whole community. Carteret county has sustained a great loss by the death of this eminent medical gentleman, and it will be difficult to fill his place. He died in full communion with the Church, and his last hours were full of Christian faith.
E. D. K.

CREOLIN is a dark brown, oily liquid, of a tarry odor, soluble in ether, alcohol and chloroform, and by bacteriological test is a stronger antiseptic than carbolic acid. It may be applied to wounds in a solution containing from 1 to 5 parts per 1,000 without fear of poisoning. It is used in purulent diseases of the nose and throat as an antiseptic and deodorizer. Local applications should be made by means of a cotton tampon about the size of the little finger, moistened in a solution of creoline and pressed carefully into the depressions of the diseased surface. A case of probable creolin poisoning is reported, but when analyzed it is quite as likely that the uterine douche into which it entered is chargeable with the poisoning, and it might have happened independent of the creolin.—*Abstract from Am. Jour. Med. Sc.*

Antipyrin is recommended in cases of acute coryza, in about a 4 per cent. solution. It does not produce dryness as cocaine does. It can be combined with the latter alkaloid, enabling one to use a smaller amount of cocaine (¼ to ½ p. c.)

The Hoaglan Laboratory has been completed, and is a great honor to the donor and to the Long Island College Hospital with which it is connected. The building cost $100,000. Dr. George M. Sternberg is the Director, and Dr. George J. Kemp, Ph.D., formerly of Johns Hopkins, is his assistant. Dr. J. H. Raymond, editor of the *Brooklyn Medical Journal*, is Secretary. We learn that the laboratory is open for the use of real students with no other expense than the cost of material. This movement is not the only one which has convinced us that our Brooklyn friends are building solidly a foundation of a school of medicine second to none in the country for practical teaching and the personal supervision and oversight of students. Some of our New York friends may be a little incredulous about this, but they have not as good means of judging as one who has served six years as a State Medical Examiner.

The Rebel Calomel.—The Southern doctor who was not under the dominion of the "bull" of Surgeon General Hammond when he banished our trusted therapeutical friend–Calomel—from the list of medicines, looks on with complacency at the new discoveries of its virtues which are being so numerously vaunted by the old enemies of the drug. But here is our old and tried friend come back from its ignominious banishment to take a high place, but alas! no longer the dignified place of an alterative, but as a germicide. Well, well, welcome back, old friend; you were a rebel and were sent beyond the lines because of your dangerous tendencies, your threatened dangers to the armies under the old flag, and, although you must be clothed in a new uniform before you can be reinstated—take the oath, so to speak, no longer to be an alterative, but to be an enemy to all "germs" and hidden microbes until regularly exchanged. If you can do well in your new rôle your old friends will not object, knowing your innate respectability, and, in the language of Oliver Wendell Holmes, if the friends of your new adoption again score you:

"When your heart has grown weary and your feet have grown sore,
Remember the pathway that leads to our door."

It is a great boon to feel that you are again restored to confidence for loyalty, but to be courted and petted and patronized after rejection and calumny, is indeed sweet.

The day is not far distant when calomel can be written about and administered by our Northern friends with proper confidence, and we will be glad to see them settled down to a rational administration of it, whether they are dominated by the microbian alterative or antiphlogistic theories.

THE ALABAMA MEDICAL AND SURGICAL AGE is the new medical journal we have been hearing about for some weeks past. It is edited by John C. LeGrand, M.D., and published at Anniston, Ala. It is able to promise in its second issue to reach five or six thousand doctors monthly, which is no small beginning, and we would be willing, although in the 12th year of our journal's existence, to pay liberally for the secret which the *Age* has so early learned. The contributions, with two exceptions, are by Alabama doctors. Their State organizations of boards of health and medical societies can now have a medium through which to build up, strengthen and make practical all the many and good principles which the Alabama State laws have in them. We confidently expect the Alabama doctors to rally to this standard and develop their latent journalistic talents. All success to the *Age!*

A SIMPLE METHOD FOR VIEWING THE INTERIOR OF THE EYE.—In the *Berlin Klin. Woch.*, Nos. 50 and 52, 1888, a very interesting discussion is given of an article on "A New Method of Ophthalmoscopic Examination," read by Dr. Bellarminoff at the Berlin Medical Society and printed in No. 49 of the above journal. Dr. Bellarminoff shows that, if the eye be treated with cocaine, and a dry glass plate 6—10 mm. in diameter, with parallel plane surfaces be placed upon the cornea and carefully pressed against it, the fundus of the eye may be inspected with great facility, because the fluid from the surface of the cornea fills the space between the glass plate and the cornea, so that the effect upon the light rays of the curvative of the cornea is counteracted. In daylight a plane mirror may be used. With a dilated pupil, especially in animals (as cats or horses), the fundus may be observed by diffused daylight. At night a lamp with reflector or condensation lens is sufficient. A common mirror may be used, and it is not necessary that it shall have a central opening. The fundus thus illuminated is, at the ordinary reading distance, visible as an upright image not only to the investigator, but to two or three persons standing beside him, gazing with both eyes at the eye of the patient. The image thus seen is not much enlarged. A larger field, however, is obtained. The method does not cause symptoms of irritation in the eye inspected. It is not impossible that the study of the chamber, iris, lens and vitreous may be advanced by this method. He thinks it may be useful in examination of the eyes of the insane, of children, of patients who cannot sit up, and of animals. It seems that this method which Dr. Bellarminoff advances is essentially new and is worthy of further study. At the discussion of his paper one week after it was read, Dr. Uhthorf said he had tried it during the week, and although it was unpleasant to the patients, and not so convenient as the ordinary examination with the ophthalmoscope, he thought the wider field which it gave and the opportunity which it afforded for binocular vision were enough to ensure for it further trial.—*Maryland Med. Jour.*

AN OLD REMEDY DOOMED.—Spirits of nitrous ether is a drug that has become a household remedy; and as it is harmless always and somewhat helpful at times, its domestication in the family medicine-chest meets approval. The drug is, however, uncertain in composition and effect, its virtues depending, it is believed, chiefly upon its nitrite. A pure solution of ethyl nitrite has been found by Prof. Leech, of London, to have exactly the same effect as the spirits when given in equivalent doses. Prof. Leech is, therefore, of opinion that since a fairly stable solution of pure ethyl nitrite is now available, the formula for its preparation should be included in the "Pharmacopœia," and that the time-honored spiritus ætheris nitrosi should disappear from the list of official remedies.—*Medical Record.*

THE DOCTOR AS A CIVILIZER.—The large part played by medical travellers and missionaries in the most remote and uncivilized parts of the world in attracting the affection of savage populations and leading them in the path of civilization, is not the least glorious page of medical history, and would afford material for an interesting research. Mr. George Curzon, in his account this month of a *Visit to Bokhara the Noble*, gives a highly interesting sketch of Dr. Heyfelder, who was chief of the medical staff in Skobeleff's Turcoman campaign. "It would be hard to exaggerate the part which his manners and generosity have played in the pacification of this whilom haunt of fanaticism. As early as 6 o'clock in the morning people crowd into the embassy to see him. Very often so childish is their faith that they do not ask for a prescription, but simply implore his touch. . . . A fat old Bey, he told me, came to him one day and said: 'Can you make me better? I suffer from eating four dinners a day.' 'Certainly,' said the Doctor—'eat three.' Thereupon the old gentleman became very angry, and retorted: 'How can I eat less when I am called upon to entertain venerable foreigners?' I asked the Doctor whether it was out of benevolence that he continued to reside in Bokhara. 'Yes,' he replied, 'and as a pioneer of civilization.'"—*British Medical Journal.*

ACETIC ACID IN DIPHTHERIA.—F. Englemann (*Deutsch. Med. Wochenschr*, No. 46, 945, 1888) made extended bacteriological studies on many of the different substances usually employed as local applications in diphtheria, in order to determine their power to prevent the growth of micro-organisms. After detailing somewhat the nature of his experiments, he concludes:

1. Diphtheria must be treated on the same principles which are generally accepted as applying to analogous processes in surgery and obstetrics.

2. The majority of the substances recommended for local application in diphtheria deserve no confidence, since they do not exercise sufficient antiseptic power.

3. Almost only those act with certainty which in sufficient concentration have proved themselves of value in surgery also. Like these, acts the hitherto little esteemed acetic acid.

4. Most of the powerful antiseptics are ill-suited for use in diphtheria, on account of their local or general poisonous action.

5. Acetic acid appears especially to be recommended on account of its certain antiseptic action, its harmlessness and the slight irritation which it produces. It possesses, also, in high degree, the power of penetrating animal tissues.—*Am. Jour. Med. Sc.*

SUCCUS ALTERANS.

(McDADE.)

SUCCUS ALTERANS is a purely vegetable compound ofthe preserved juices of Stillingia Sylvatica, Lappa Minor, Phytolacca Decandra, Smilax Sarsaparilla and Xanthoxylum Carolinianum, as collected by Dr. Geo. W. McDade exclusively for Eli Lilly & Co., and endorsed by Dr. J. Marion Sims.

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SUCCUS ALTERANS is giving satisfactory results in treatment of *Chronic Rheumatism* and can be used with confidence.

SUCCUS ALTERANS may be given for any length of time, without injury to the patient.

SUCCUS ALTERANS is put up in pint round amber bottles and *never in bulk.*

PHYSICIANS who have not received Dr. McDade's latest publication, the Monographia Syphilitica, should send their address, mentioning this journal, and we will mail a copy. It contains a paper, illustrated with colored plates, by Dr. D. H. Goodwillie, of New York, on the "Sequelæ of Syphilis," reports of cases in practice and many other valuable papers.

ELIXIR PURGANS.

Elixir Purgans (Lilly) reliably stimulates the dormant liver without undue irritation, and has gentle yet positive effect upon the alimentary tract. In Habitual Constipation, so common in Women and Children, it will be found particularly useful. Its endorsement at Bellevue and many other prominent hospitals east and west, as well as its employment in general practice by the most eminent medical men, confirms the experience of years in its use.

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Rhamnus Purshiana,	10 grs.
Euonymus Atropur.,	8 grs.
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NEWER THERAPEUTICS OF PEPSIN.

The utility of a remedy depends largely upon its genuineness, its purity, and its preparation in that form which is best adapted to meet the particular conditions or indications for its use

Modern pharmacy has achieved most important and useful results in the direction of improving the quality of remedies, of rendering them easier of administration and absorption, and better adapted for the purposes for which they are required. By this means, also, the range of therapeutic application of many remedies has been extended.

Not the least striking of the results recently attained has been the improvements made in the quality of the digestive ferments, and in the growth of knowledge concerning their action and application With this increased comprehension of ferments has naturally come an extension of their application.

This is conspicuously illustrated by pepsin, which has been prescribed for many years with little knowledge concerning its digestive activity or incompatibilities, and the dose required; but rather as an aid to digestion in all cases of indigestion indiscriminately

Recent researches carried on in our laboratory have enabled us to produce a pepsin which is superior in every quality that goes to make up a pure active pepsin to any hitherto made This has been demonstrated over and over again. We need only mention here in confirmation of this claim the results obtained by a recent elaborate study of pepsins of various manufacture made by R. H. Chittenden, Ph. D. Professor of Physiological Chemistry in Yale University, who thus sums up the results of his investigations, in a paper read before a section of the New York Academy of Medicine:

"As a final result, then, we may consider the true proteolytic power of the following pepsins compared with the one of highest digestive power to be as follows:

		Relative Proteolytic Action.
1	Parke, Davis & Co.'s Pepsinum Purum in Lamellis..	100
2	Fairchild's Pepsin in Scale ..	52
3	Scheffer's dry Pepsin, concentrated..	48
4	Jensen's Crystal Pepsin......... ...	35
5	Ford's Pepsin in Scales................	32
6	North's Pure Pepsin	16
7	Boudault's Pepsin	14
8	Royal Chem. Co.'s Pure Pepsin......	9

"As to the actual strength of these preparations, 1 milligram of the strongest pepsin converted into soluble products 138 milligrams of the pure dry albumen, which would be practically equal to 2000 parts of fluid egg-albumen."

While the use of pepsin was for a time confined chiefly to internal administration, it has been gradually extended to the digestion of visible false membrane and abnormal tissue growths. Thus many physicians have used it with some degree of success in digesting the false membrane of diphtheria and membranous croup This use of pepsin is likely to become much more universal and efficient with the greatly augmented digestive power now possessed by the latest improved pepsin.

In an article entitled "Pepsin in Surgery," by H. B. Douglass, M. D., New York *Medical Record*, Dec 22d, 1888, the use of pepsin in scales and as an ointment with lanolin as a base in ulcers, was strongly advocated, and several cases illustrating its value in surgical cases cited. Dr. Douglass says: "In all ulcerations covered with a slough, or having a membranous base, pepsin is of use to digest this slough and bring about a healthy condition. In cicatricial tissue causing anchylosis, pepsin is of use by dissolving the cellular element. In this condition pepsin may act similarly to mercury and the iodides, or as a digestive.

In operations for increasing the size of the meatus urinarius in which the parts divided tend again to unite, the membrane thus formed may be digested away and the calibre kept intact by the digestive power of pepsin.

We believe that the role of pepsin as a solvent of false membranes will not be its least important one in the future, and would respectfully request reports from physicians who employ it for this purpose, that we may give the facts wide publication to the profession.

To those who wish to learn more of the action and proper method of administration, and incompatibilities of pepsin, and of the interesting history of the researches that have resulted in the superior quality of pepsin now at the disposal of the physician, we shall be pleased to send on request reprints of articles by R. H. Chittenden, Ph. D., John R. Winslow, M. D., H. B. Douglass, M. D., J. Le Roy Webber, Ph.G , F. A. Thompson, Ph.C., and others; and a sample of Pepsinum Purum in Lamellis for trial.

PARKE, DAVIS & CO.,

DETROIT AND NEW YORK.

Antifebrin has been used successfully in a case of tetanus by Dr. Flammarion.—*Bulletin Général de Thérapeutique.*

Lime-water in Diabetes.—Dr. Theodore Clemens claims that the use of ℥ j. to ℥ ij. of lime-water daily will prevent the tendency to diabetic coma in the diabetic—*Allgemeine Central-Zeitung.*

Charleston, S. C., March 16, 1889.

The next Annual Meeting of the South Carolina Medical Association will be held in Charleston, S. C., on Wednesday, April 24th, 1889. An address will be delivered by Dr. Robert Battey, of Rome, Ga. Excursion rates will be obtainable on all roads leading to the city, as the Floral Fair will occur during that week.

W. Peyre Porcher, M.D., Secretary.
C. R. Taber, M.D., President.

A Fault.—We see it stated that the law creating the Board of Medical Examiners of South Carolina excludes the graduates of the Medical Society of South Carolina from examination. If so, it is a serious fault. Surely our neighbors will not be content with a law less just than ours. The fact is that our law is superior to that of Virginia and South Carolina, and ought to be, as *as we are the pioneers and leaders in this great reform.*

The Florida State Board of Health is now, so far as the legislative act is concerned, a reality; it is thought that the Governor will soon appoint the members of the Board. We have not seen a copy of the act, and do not know its conditions and provisions. The Board is to consist of three members, who will select from the State at large a secretary and an executive or health officer, the latter to be a physician. Whether the emoluments of the officers will be sufficient to warrant them in giving the proper attention to their duties, we do not know. As a general rule such is not the case, Governments cannot expect to have offices properly filled so long as private enterprise is allowed to outbid the public services. Yellow fever cost the State of Florida millions of dollars last summer; it can never recover that money, but by paying efficient men to look after its health, it may avoid the loss of millions in the future.—*The Jour. of the Amer. Med. Asso.*

BOOKS AND PAMPHLETS RECEIVED.

Forty-sixth Registration Report of Massachusetts, 1887.

Annual Report of State Board of Health of Michigan for 1887.

Third Annual Report of the State Board of Health of Maine, 1887.

Tenth Biennial Report of the State Board of Health of California.

Annual Report of State Board of Health of Rhode Island for 1887.

Sixth Annual Report of the State Board of Health of Indiana for 1887.

Comparative Studies of Mammalian Blood, by Henry F. Formad. B.M., M.D.

Eleventh Annual Report of the Health Commission of St. Louis, Mo., 1887–'88.

Proceedings and Addresses at a Sanitary Convention held at Manistee, Mich., June 5 and 6, 1888.

Proceedings and Addresses at a Sanitary Convention held at Orocsso, Mich., November 22–23, 1887.

Tenth Annual Report of the State Board of Health of Rhode Island for the year ending December 31, 1887.

Transactions of the Medical Association of Missouri at its 31st Annual Session, held at Kansas City, Mo., April 17, 1888.

Fifteenth Annual Report of the Secretary of the State Board of Health of Michigan for the fiscal year ending June 30, 1887.

Address on State Medicine; Recent Advance in State Medicine; by Henry B. Baker, M.D., Secretary State Board of Health, Lansing, Mich.

Compendium of the Laws Relating to the Public Health and Safety of the State of Pennsylvania, together with the Decisions of the Supreme Court and County Courts Relating thereto.

New Hampshire Registration Report for 1886.

Cronica Medico Iniringica de la Habana, Diciembre de, 1888.

Report of the State Board of Health of Pennsylvania, 1886.

Transactions of the Medical Society of Pennsylvania, Vol. 20, 1888.

Eighth Annual Report of the State Board of Health of New York.

Forty-sixth Report of Births, Marriages and Deaths in Massachusetts, 1887.

Physician's Visiting List, 1889, published by P. Blakiston, Son & Co., Philadelphia, Pa.

Bryce's Visiting List, published by C. A. Bryce, M.D., Richmond, Va. Price $1.00.

"Lectures on Ectopic Pregnancy and Pelvic Hæmatocele," by Lawson Tait, F.R.C.S., England.

Reversive Anomalies in the Study of Neuroses, by Irving C. Rosse, M.D., of Washington, D. C.

"Medical Bulletin Visiting List," published by F. A. Davis, 1231 Filbert Street, Philadelphia, Pa. Price $1.25 and $1.50.

Second Annual Report of the Secretary of the State Board of Health of Vermont for the year ending September 1888.

A Manual of Dietetics, by Dr. W. B. Pritchard, of New York, published by the Dietetic Publishing Company, New York. Price $1.00.

"Why Electrolytic Treatment of Stricture does not Succeed in all Hands," by G. C. H. Meier, M.D., Member of the New York State Medical Association.

The Case of Emperor Frederick III. Full Official Reports by the German Physicians and by Sir Morell Mackenzie, published by Edgar S. Werner, New York.

READING NOTICES.

Nervous Headache.—With the constantly increasing nervous disorders of the female portion of my practice, I find that Peacock's Bromides do more to relieve such patients and lessen the cares and anxieties of the physician, than anything I have ever tried. I had a female patient lately who had to go to bed for four or five days, at each menstrual period, on account of nervous headache. One bottle cured her, and the three last periods have been easy and no headache. I use it in all classes of nervous troubles with great benefit.

Clayton, Ind. Geo. H. F. House, M.D.

Ingluvin in the Vomiting of Pregnancy.—Dr. Popp (*Pester med. Presse*, No. 40, 1888) reports having achieved considerable success with Ingluvin in the vomiting of pregnancy. Having a very obstinate case, upon which he had exhausted the entire resources of the pharmacopœia, he administered three times daily, one-half hour before mealtime, eight grains of Ingluvin, and directly afterward two tablespoonfuls of one per cent. hydrochloric acid solution. An improvement was observed after a few doses had been taken, and a cure effected after the treatment had been continued for three weeks.—*Deutche med. Wochenschrift*, January 17, 1889.

Habitual Constipation.—W. J. Maddox, M.D., Washington, D. C., says: "In regard to results produced from the use of Acid Mannate, I will give two cases: Case 1, Mrs. N. C., applied to me for treatment for habitual constipation. After trying several remedies without any good effect, I put her on the Acid Mannate treatment. Since taking it she has had marked improvement, and at this date is not troubled with constipation Case 2, Mrs. F., pregnant, was troubled with constipation. I gave the Acid Mannate, and find that it acted like a charm with her. She, at the present time, is not constipated. Both of the above patients told me that the Acid Mannate operated very mildly. It is the remedy for constipation, either habitual or caused from pregnancy. I shall continue to use it, being very much pleased with its action."

NORTH CAROLINA

MEDICAL JOURNAL.

THOMAS F. WOOD, M. D.,
GEO. GILLETT THOMAS, M. D., } Editors.

Number 4. Wilmington, April, 1889. Vol. 23

ORIGINAL COMMUNICATIONS.

REMARKS ON BLOOD-LETTING.

By R. L. Payne, A.M., M.D., Lexington, N. C.

I do not flatter myself that posterity will bother itself very greatly about what I have, or have not, done as a physician, nevertheless I am anxious once again to be put on record, although it be imperfectly done, as one who never "abandoned the lancet," and I further desire that my professional brethren, and especially the younger men among them, shall know that I have never been frightened to death by a reasonable abstraction of the "liquid flesh" in certain pathological conditions. Not a year has passed for the last thirty-two in which I have not used the lancet, and, looking back over all these years, I cannot recall a single instance in which I have regretted doing so, but I do remember cases in which I regretted not having done so, one of which I will mention further on.

Now, I am not a croaker or a pessimist, so far as our glorious old profession is concerned, but on the contrary am an optimist, and am fully persuaded that at no time heretofore have there been so many thoroughly competent and well qualified physicians as now, yet, as an "old fogie," when I think of the good results which I have seen follow blood-letting, and remember, too, how entirely a practice so valuable, so potent, and, in many instances, so indispensable, has been abandoned, I humbly "crave the indulgence of a tear," and I trust that liberal men will not attribute it all to egotism if my emotions seem akin to those of the "gray-haired sires" who

"To strangers point the Douglas-cast,
And moralize on the decay
Of Scottish strength in modern day."

A young graduate of medicine came into my office the other day, and I really thought he would faint or go into convulsions because, forsooth, he accidentally saw a lancet upon my table. At first I thought that, perhaps, some enterprising tarantula, scorpion or other venomous reptile, had immigrated into my sanctum, and had, with no regard for the laws of hospitality, stung my young brother, so great was his trepidation, so evident his horror!

But I was soon relieved by a question and remarks from him which explained the trouble. Said he: "Is not that a lancet"? I replied: "Yes, sir, that is a lancet; that is the 'relic of barbarism!'" He then said: "My professor of practice taught us this last winter that it is a very dangerous instrument, and said that he had never tried it, and would not advise us to do so." I replied: "No, sir, it is not a dangerous instrument at all in the hands of a sensible physician, but on the contrary is a most valuable remedial agent when judiciously employed. Your professor is an extremist, a one-idea man, and is no better qualified to teach young men than was the physician whose profanity led him to say: 'Don't bleed your patient, but give God Almighty a chance'! I would advise him to study well the meaning of the old Latin adage, *in medio tutissimus ibis*, before he delivers another course of lectures *ex cathedra*."

I am a great admirer of professors in general, still I never could believe that one brain contained the whole of medical knowledge, without even a minimum of error.

Rush, in his day, and Todd and Bennett of later days, were all extremists, and it is questionable whose especial teachings have done most good or ill for the human race.

It is all twaddle to say that we cannot stand bleeding as well in this day as our ancestors could, at least so far as the inhabitants of the country are concerned. I have seen women bleed with a post-partum hæmorrhage until they were extremely exsanguine, and I have seen men blanched by the great loss of blood from wounds of various kinds, and yet I have seen these same individuals only a few weeks or months afterwards with sparkling eyes, ruddy cheeks and with all the signs of vigorous health, therefore I have never hesitated to take a few ounces of blood for the relief of diseases in suitable cases.

The two following cases of pleuro-pneumonia were treated by my lamented father in the years 1835 and 1836, and are taken from his note-book. They serve to show to what extent physicians bled in that day, and also how their patients stood depletion :

"The first is that of a Lutheran minister about 33 years of age. Taken with severe chill and acute pain in left side. Skin cool, bowels regular, pulse a little excited, breathing hurried and expectorating bloody matter. Prescribed warm bath, sinapism to the side, and vensection twelve ounces; also calomel at bedtime and small doses of antimony every four hours.

"Second day, no relief; prescribed venesection twelve ounces; continued diaphoretics and gave calomel and opium in small doses.

" Third day, patient still no better. Prescribed venesection twelve ounces, and continued same remedies internally.

" Fourth day, pulse still oppressed and slow, skin still cool, breathing bad and pain not at all relieved. Prescribed venesection fourteen ounces. The patient fell back in bed while being bled, saying he was a dead man, and that he would surely die that night. I left him almost in despair, feeling that I had done right in bleeding him, but at the same time fearing that he might die, and that the by-standers would conclude that I had killed him by bleeding him too freely.

"After leaving him, in the night he became very restless, and the bandage around the arm being by some means removed, he bled a considerable quantity, I know not how much, but until he fainted and could bleed no more.

" Fifth day, skin moist, pain gone, pulse free, open and natural, and no unfavorable symptom whatever. From this time he speedily recovered."

Case Second.—"A young farmer, aged 25 years, overheated himself burning log-heaps and afterwards exposed himself to cold.

"Called on him the second or third day, and found patient with skin rather cool, pulse feeble and oppressed, difficulty of breathing and great pain in the chest, increased upon deep inspiration. Bloody expectoration. Nine bleedings from the arm, from six to sixteen ounces each, at intervals of from six to twenty-four hours before any relief could be effected or the small oppressed pulse could be changed into a more healthy one. It then became free, open and regular, the skin at the same time becoming gently warm, with a moderate and healthy perspiration. During the time of treatment (a period of six or eight days) the patient was extensively cupped and blistered over the chest, demulcent drinks freely used, calomel and opium given in small quantities, also mercurial purgatives and diaphoretics."

These cases were treated fifty-three years ago, and it is evident that my father was then as fearless in the use of the lancet almost as the mythical Sangrado himself. He acted with the lights then before him, but in the light of the present day we are compelled to confess that he not only let blood fearlessly, but, perhaps, rashly; yet the results in both these cases were as good as we can show to-day. One convalescent on the fifth, the other on the eighth day! In after years he did not let blood quite so freely, but he always relied upon the lancet and antimony, calomel and opium and sinapisms and blisters in the treatment of pleurisy and pneumonia, and I hope I may be pardoned for saying that I think no man ever treated such cases more successfully than he. I was for years his associate in the practice of medicine, and I know that he seldom treated pneumonia or pleurisy without blood-letting, either general or topical (most often both with the lancet and wet cups), and I know, also, that he very seldom lost a patient.

When a medical student I was taught that, in order to secure the best results and speediest effect from venesection, the patient should be made to sit up while being bled.

Very soon after my graduation I was called to a stout young farmer who was suffering with an acute attack of pleurisy—severe pain in the side, short, hard cough, hurried breathing and excited pulse. On inspiration the ribs of the affected side did not rise well, the respiratory murmur was feeble, and there was a distinct friction sound. I made the young man sit upon a chair, and bled him some sixteen or eighteen ounces *pleno rivo*, when he fainted and fell over on the floor. I bound up his arm, put him on the bed with his head lowered, and, after he had recovered from the syncope, gave him a full dose of solid opium (grs. 2) and ordered 1-16 grain tartarized antimony every four hours. A dose of calomel was given at bedtime, to be followed in the morning by a dose of Epsom salts, and warm poultices were applied over the pain. I did not visit him again, and in three days after he was out on his farm at work.

The following cases are of more recent date, and came under the care of my son and myself:

April 1st, 1888.—Was called to Mrs. E., a stout, fleshy widow, aged 66 years. She had walked out upon her farm after eating a substantial dinner, and was found about two hours afterwards lying upon the ground, apparently in a most profound sleep, from which she could not be aroused. She was taken into the house, and there I found her in a comatose state, breathing stertorously, face of a dark red, blood-vessels about face and head congested, and a full slow pulse. I had her raised upon the side of the bed, and, after strenuous efforts, aroused her to partial consciousness, but she could not talk so as to be understood, and her left arm and leg were completely paralyzed. This was a case of apoplexy, and I regarded it as hæmorrhagic, and not congestive, because of the stertorous breathing, the extent of coma and the complete hemiplegia. Bled her from the arm, while she was held up on the bedside, twenty full ounces, gave her brisk cathartic and ordered arterial sedatives, cold, to the head, and a very light diet.

April 3d.—She was seen by my son, who found her conscious and able to talk a little, but she complained of pain in the right side of the head, and was still paralyzed. He continued the tinct. veratrum, and gave small doses of calomel every four hours. Neither of us visited her again, but she was kept upon the above treatment for several days longer, when the veratrum and calomel were discontinued, and she was put upon the iodide of potash and bichloride of mercury after each meal.

April 15th.—She rode over to our office and seemed almost as well as ever she was, except slight want of power in the left hand, and she continues so to this day, and attends regularly to her calls as a midwife, though she says that her left hand is still weak.

The next case was seen first by my son:

October 16th, 1888.—Was called to see Mr. S., aged 65 years. A few hours before, while attempting to lift a heavy weight, he fell prostrate and began talking incoherently, and when his sons attempted to lift him up he could not use the right arm and leg. I found him with flushed face, injected conjunctivæ and quick, hard pulse. His mind was clearer than when first attacked, but he could not express himself very clearly, and there was paresis of the right leg and complete paralysis of the right arm. I bled him about eighteen or twenty ounces, ordered a saline cathartic, bromide potash every four hours, cold, to the head, low diet and rest in bed.

October 18th.—I saw Mr. S. He seemed to be doing well in all respects, except a slight want of power in the right hand. Continued the bromide. We did not visit him after this date, but he continued to improve, and now appears to be entirely well. Was this a case of congestive apoplexy—apoplexy from a slight hæmorrhage, or was it cerebral embolism? I am not at all confident which, but I do feel sure that the venesection was of benefit to him.

April 20th, 1887.—We visited a young man, John M., aged 19 years, who was sick with a characteristic and severe attack of pneumonia of the left lung. He had been ill for several days before we saw him, and important time for treatment had been lost, but we did what physicians often have to do—the best we could—and put him on the received treatment for the beginning second stage of croupous pneumonia. We visited him regularly, and on the eighth day of the attack found him with all the bad symptoms greatly aggravated. The greater portion of the left lung was now solidified. His lips were blue and his face wore an anxious, pinched expression and a dusky, mottled appearance. He was breathing with extreme difficulty and at least fifty times a minute, and his expectoration was copious and very bloody. His pulse was small, feeble and frequent, and his temperature had gone up to 107°, and had never been below 104° since we had seen him. Upon auscultation crepitant râles were detected, both in front and at the back, in the lower lobe of the right lung. Now, what more could we do for this young man? He was already taking heart tonics, stimulants, etc., freely—digitalis, ammonia and brandy, and was in a warm room, with poultices to chest, etc., still he was evidently about to die! When I reflected that all the blood in his body must pass through his lungs, and knew that they were crippled and could not perform their function, and believed that his respirations were frequent and labored because the lungs were making a desperate effort to aërate the poisoned blood, and when I believed that his pulse was small and feeble and frequent, not simply because the heart was weak and needed a stimulant, but rather because it was oppressed and overwhelmed by a load beyond its normal capacity, I knew of no remedy likely to afford relief but venesection.

I had seen a man in a condition precisely similar in all respects only a short while before, and I saw him die while I relied upon heart-tonics and stimulants. I believed that the boy before me would die, and die in a few hours, if I did not bleed him, and, although I was afraid to do so, I bound up his arm and abstracted eighteen ounces of blood in full stream. His whole appearance changed for the better under the bleeding, and, while I was binding up the arm, he said to me: "Doctor, I feel better and can breathe easier."

From this time there was a gradual, but perceptible, amelioration of all the bad symptoms, and he went on to complete recovery. This seemed to be the turning point in his case, and I firmly believe that he would have died without the bleeding.

February 3d, 1889.—Was called to see Mr. G., a fine, robust young man, aged 23 years. He had had a severe chill the night before, which was followed by high fever and pain in the right side, and was now coughing a good deal and expectorating the characteristic bloody rust-brown or brick-dust sputa. His pulse was 120, his respirations 36 per minute and his temperature 104°. Had slight dullness on percussion and crepitant râles over a large portion of the lower lobe of the right lung. I bled him sixteen ounces from the arm, gave a mercurial purgative, and ordered two drops of Norwood's tinct. veratrum, with 1-12 of a grain tartarized antimony, to be administered every four hours in slippery-elm water, and warm poultices to side.

February 5th.—Condition of patient somewhat improved, pulse down to 80 beats per minute, respirations still hurried, some blood in sputa still, temperature 101°. Continued the same treatment and added a few small doses of calomel and opium.

February 7th.—G. evidently much better. Pulse 76, respirations 22 per minute, temperature 99°. Continued the veratrum and gave decoction of senega, with a little brandy, every four hours for a day or two, and discharged him conditionally. But he did not need me again, and I met him in town last week, looking as well, as strong and as red as he would or could have done had he never lost one drop of the precious "liquid flesh."

I might go on citing case after case in which I have, in my humble opinion, seen good results follow blood-letting, but will content myself by advising those of my medical brethren who have not done so, sometimes to try the lancet. Handle it judiciously, and I feel assured you will never regret it, because, beyond a question, blood-letting is a valuable remedy in many forms of congestion, in certain stages of pneumonia and pleurisy, in meningitis, either idiopathic or traumatic, in many cases of sunstroke, in apoplexy, in certain cases of nephritis, and in almost all cases of puerperal eclampsia. In this last mentioned trouble I nearly always bleed, and I am almost ready to say :

"Strike till the last armed foe expires,"

or, in other words, consider more the effect produced than the quantity of blood lost.

"Prove all things, hold fast that which is good," is a conservative motto for a physician, and as a profession it behooves us never to condemn a measure simply because we have never tried it.

There are two sides to every question. Let us, then, endeavor always to choose the good and eschew the evil, but pray do not let us be so wedded to our own pet theories and special hobbies, as for a moment to believe that there is "no balm in Gilead," and "no kind physician there," unless ours be the balm and ourselves be the physicians !

THE ORIGIN OF SPUTA IN SUBACUTE COUGH.

By W. Peyre Porcher, M.D., Lecturer on Diseases of the Throat and Nose in the Medical College of the State of South Carolina, and on Materia Medica and Therapeutics and Diseases of the Throat and Nose in the Charleston Medical School.

The following notes of cases will illustrate forcibly the conclusion that has urged itself upon me with regard to the origin of sputa in most cases of subacute cough. I do not wish to be understood as implying that all sputa has its origin in the nose and naso-pharynx, any more than I wish to be understood as asserting that the remedy which proved sufficient for the cases cited will act as a panacea for all coughs. But I do wish to say that, in the great majority of cases of subacute cough, resulting, as they do ordinarily, from one or more attacks of rhinitis, and even when the cough has existed for a length of time, that treatment directed to the nose and naso-pharynx alone, will stop these attacks as well as many other affections of the upper air passages, without any applications being made to the larynx or any medicine being given internally.

The first case was that of a physician who, having undergone a fatiguing journey, took a severe cold, which was followed by a violent cough, accompanied with the usual ejectment of sputa in large quantities. A single application of a solution of nitrate of silver (grs. lx. to ℥ i) to the naso-pharynx was sufficient to materialy lessen the cough and cause a decided diminution of the sputa.

B continuance of the treatment relieved him entirely of the cough without a single application having been made to the larynx or trachea, or any medicine given internally. The patient having been under the impression that the lungs and bronchi were the source of the discharge, expressed himself as being "bewildered" at its sudden disappearance as well as at the cessation of his cough and asthma, and that he could not have believed it possible had not it occurred upon his own person.

The next case was very similar to the first, except that it was more of a chronic character.

The patient had previously had serial attacks of cough of more or less severity—had gotten thin and pale, and thought himself destined to become a consumptive from the amount of sputa brought up as well as the obstinacy of the attacks. His septum nasi was depleted to such an extent as to practically occlude his left nostril, and he was therefore dependent upon the right for breathing.

His treatment consisted strictly of applications of nitrate of silver to the naso-pharynx (ʒ i to ℥ i) daily until his cough disappeared.

It was especially striking in this case how suddenly the cough and sputa were checked. The attack was at its height on his first visit to me, and that night he had very little cough or sputa. This was due alone to the local treatment, and the large quantity of sputa which he had been spitting up for days past could only have come from the naso-pharyngeal space.

Cases of this kind can easily be multiplied, but these suffice to indicate the source of the discharge as well as prove the beneficial results of the treatment.

Lenox Browne, in his last work on "Diseases of the Nose and Throat," makes the statement that it is the universal rule for inflammation in the upper air passages to pass downwards, and a rare exception for it to come from below upwards; and nowhere is this rule more forcibly illustrated than in the invariable custom of patients to attribute the origin of an inflammation in the larynx to a previous rhinitis.

The most natural corollary to this is that, in inflammations of the larynx, the nose and naso-pharynx are the principal sites to which treatment should be directed, and the deduction would be that the inflammation above produced the sputa, and the sputa which descended produced the cough.

The well-known fact that almost all sensations in the throat are referred to the anterior part of the regio laryngo trachealis, will account for the profound impression of patients that the secretion of sputum is entirely produced by the mucous membrane of the lungs and bronchi, whereas experience has taught us that most generally the pathological disturbances are situated in the choana or naso-pharynx, and the proofs of this are :

1st. Physiological, by exciting the parts with a probe, as in a case where a probe being passed into the naso-pharynx, the patient asserted that, for the first time, the seat of the pain had been reached—which she had previously located below the clavicle.

2d. Pathological, by the different causes which give rise to the cough, viz: colds and inflammations of the naso-pharynx, which, in our opinion, rarely, if ever, originate in the larynx.

3d. By the results of local treatment to parts.

Hence we may conclude from this (and opinion generally supports us in the conclusion) that when a patient applies to us suffering from a cough, we need not administer the invariable cough mixtures containing nauseating doses of antimony, squills, ipecac, etc., but simply confine our treatment to the nose and naso-pharynx.

CALL FOR THE SEVENTH DECENNIAL CONVENTION for Revising the Pharmacopœia of the United States of America.—Notice is hereby given that, in accordance with, and by virtue of, the authority vested in me by the Convention of 1880, I hereby call upon the several incorporated Medical Societies, incorporated Medical Colleges, incorporated Colleges of Pharmacy, and incorporated Pharmaceutical Societies throughout the United States of America, the American Medical Association, and the American Pharmaceutical Association, to elect a number of delegates, not exceeding *three*, and upon the Surgeon-General of the Army, Surgeon-General of the Navy, and the Surgeon General of the Marine Hospital Service to appoint, each, not exceeding *three* medical officers to attend a General Convention for the Revision and Publication of the Pharmacopœia of the United States of America, to assemble in the City of Washington, D. C., on the first Wednesday of May, 1890 (May 7th), at 12 o'clock noon. The several bodies, as well as the Medical Departments of the Army, Navy and Marine Hospital Service, are hereby requested to submit the Pharmacopœia to a careful revision, and to transmit the result of their labors to the Committee of Revision at least three months before the meeting of the General Convention. A blank form of certificate of appointment ot delegates will be sent upon application by letter to my address, care of Dr. Edwin H. Brigham, Assistant Librarian of the Boston Medical Library, 19 Boylston Place, Boston, Mass.

(Signed) ROBERT AMORY,
Boston, March 9, 1889. President of the Convention of 1880.

SELECTED PAPERS.

ELECTRICITY AS A THERAPEUTIC AGENT.

By M. Allen Starr, M.D., Ph.D., Professor of Diseases of the Mind and Nervous System in the College of Physicians and Surgeons, New York.

In the management of a business concern the results of taking account of stock and of balancing the books is rightly considered of supreme importance. Perhaps it might be of advantage to us as practitioners if the results of our work could be occasionally reckoned up in a similar manner, and a definite estimate made of the value of our methods. It is in pursuance of this idea that electricity as a therapeutic agent is brought before you for discussion to-night. Over a hundred years ago it was introduced into medical practice. Since that time it has met with varying degrees of favor. Twenty years since, under the impetus of German influence, its use in nervous affections was firmly established. Yet recent writings and text-books on the medical use of electricity show a disregard of recent advances in the knowledge of the physics of this agent. And it needs very little study to convince one that the modern view of electricity differs widely from the older views reproduced in medical literature. To follow them closely would lead one to consider electricity as an entity, possibly a fluid, which can be administered like a drug. The term "current" is partly responsible for this fallacy, it being difficult to deal with this term without imagining a flow of something in a definite direction. Yet, just as the older term caloric is now discarded, and the old notion that "heat is the result of caloric being poured into a body" raises a smile, so similar fallacious notions regarding electricity should at present meet with disapproval.

The sooner it is realized that electricity, like heat and light, is merely a form of activity in matter, and the sooner the term 'electrical currents" gives place to the more accurate phrase *state of electrification*, the sooner will the mystery surrounding this agent be cleared away.

When electricity is applied to the body a change is produced in the normal condition of the molecules making up the body, a new molecular condition is produced, but nothing is added to, or subtracted from, the body itself.

Between the two poles of the battery this molecular state is more intense than elsewhere, and under one pole it is somewhat different from that under the other. The intensity of the change is measured roughly in terms of the strength of its pull upon a balanced needle, but this should not lead to the adoption of such terms as a dosage of electricity, which, like the term current, is sure to mislead.

When electricity is thus regarded as a mode of energy capable of estimation, like other modes, in terms of work, it becomes evident that a valuation of the various forms under which this energy appears is impossible.

In common usage these forms are static or frictional electricity, voltaic electricity or galvanism, and induced electricity or faradism· It should be distinctly understood that all these forms are really the same mode of energy displayed under varying conditions. An illustration may make this plain. Suppose that you have a dry sponge and a tumbler of water. If you throw the water over the sponge the greater part of it will run off, leaving only the surface of the sponge wet. You have applied a quantity at once, and your effect is short and soon over. Suppose, on the other hand, you let the water fall on the sponge drop by drop. It will soak in and wet it thoroughly but gradually, until in the end all the water will remain in the sponge, which is now soaking. The effect is slow but intense. Water and sponge are the same in both cases. The conditions vary under which they are brought together.

This illustration, which is not to be taken literally, may convey some notion of the difference between static and voltaic electricity. By the former, sudden transient effects are produced very limited in intensity. By the latter, slow permanent effects are produced of much intensity.

1. *Static Electricity.*—It seems strange, when the history of the uses of electricity is reviewed, to find how much credence is still placed in the effects of frictional electricity. In the first place, the change of electrical state produced by it is limited exclusively to the surface of bodies charged. Take a metal ball insulated by a glass stand over which two hemispheres are fitted, and charge this with static electri-

city. If the hemispheres be now removed from the surface, they are found to carry all the electrical charge, and no change of electrical state has been produced in the metal ball beneath them. There is absolutely no proof that the human body acts in any way differently from the metal ball. Any effects obtained by static electricity must, therefore, be from surface stimulation; and, hence, wholly reflex and indirect in character. For this form of electricity does not penetrate the skin.

When the surface of a body is charged with static electricity, it discharges itself gradually into the air by diffusion, or directly into the ground if the body be not insulated. The human body cannot be permanently charged with electricity. The state of electrification on the surface of the body is communicated to the air about, which is thus put in a similar electrical state. But bodies in a like state of electrification repel one another. Hence the hair, when charged, is repelled from the body, and stands on end; air, when charged by diffusion, moves away from the body, and the air in motion is felt as a breeze; hence, when a person is charged with static electricity this breeze may be felt. There is no more virtue or curative property in an electrical breeze than in any ordinary draught of air. Hence, it is ludicrous to read of the beneficial effects ascribed to the electrical breeze.

If all effects of static electricity are reflex in their nature, due to irritation of the skin, then the agent differs in no respect from any mild form of counter-irritation—such as whipping with twigs. lomi lomi of the Sandwich Islanders, the needle douche of a Turkish bath—excepting, possibly, in the convenience of application. Stimulation of the circulation, contraction of muscles as from a blow, agreeable sensations, or sharp pain, may all be produced in such a reflex manner, if they are considered desirable. But no further distinctly curative effects can be admitted. And as we shall see later, the same effects can be secured by faradism.

I pass by the mental effects induced by an exaggerated idea of the mysterious power of electric sparks as beneath our notice. The elements of mystery and of expectant attention doubtless play a part in the treatment of some functional nervous affections. It is an open question how far they may be legitimately employed. If static electricity relieves hysterical affections, it must be admitted that it is entirely by means of the mental effect produced.

2. *Voltaic Electricity or Galvanism.*—A frictional machine does

all its work suddenly, in a fraction of a second. It is not capable of producing a constant electro-motive force. This can, however, be obtained from a galvanic battery; and very soon after the discovery by Volta, the use of static electricity was superseded in medicine by that of galvanism. The fact that a voltaic battery furnishes a definite amount of electro-motive force capable of doing a measurable amount of work and producing definite effects on the body suffices to explain its continued use. Yet, when we speak of definite effects from galvanism, I think there are few physicians to be found who will contend for a moment that there is any such certainty regarding the therapeutic effects on the body as there is regarding the use of drugs. Opium will quiet pain; aconite will depress the heart. Is there any statement which can be made with equal definiteness regarding electricity? I think not.

As far as the effects of galvanism are now known, they may be classified under three distinct heads, viz: catalytic, cataphoric and electrotonic effects.

a. Catalytic Effect.—The splitting up of a compound element into its constituent parts is one of the ways in which the work done by electricity is measured. The compound body is put into a state of electrification which makes the condition of its molecules so unstable that they fly apart, and as they burst asunder those which have taken on a state like that of one pole of the battery are repelled from it and appear at the opposite pole. A strong current passing through the body produces intense catalytic effects, disintegrating and destroying the tissues, and raising blisters under each pole, the one containing acid, and the other an alkaline fluid. Even with a weak current the taste produced in the mouth differs at the different poles, one being sour, the other salty. There is no doubt, then, that marked chemical changes may be produced by the galvanic current.

This power, then, may be used like that of any other destructive agent, to dissolve body tissues. In some cases, such as elimination of hairs from the face—it is convenient. How successful it may prove in the destruction of tumors, especially of the internal organs, it is hardly time to judge. In the resolution of strictures its use is strongly combated by eminent authority after thorough trial. In any case the difficulty of limiting its action, the serious nature of the wound which is left, the slow healing and deep scars which remain, combine to make it less certain, less definite, less satisfactory than ordinary surgical procedures—and, consequently, it is not endorsed by surgeons generally.

The use of mild, non-destructive currents has been urged by some, and it has been claimed that a catalytic effect of a moderate kind may aid nutrition. Nutritive processes are dependent on chemical and molecular changes. Is it possible to stimulate these by a constant galvanic current? Theory here is aside from the point. Experience must furnish facts. The only scientific observation which I have been able to find is furnished by Professor James K. Thacher, of Yale, and it is certainly extremely valuable and intering. In a case of bilateral paralysis of all the extremities, due to diphtheritic multiple neuritis, Dr. Thacher made a series of therapeutic experiments upon the arms—each arm being treated alone for a week at a time, and its relative gain under treatment being compared with that of the opposite untreated arm. The results were measured in degrees of strength of grip as determined by a dynamometer.

It was found that the arm to which a labile constant galvanic current was applied for ten minutes, gained in strength in a degree far greater than that of the untreated arm. So that the gain under galvanism could be exhibited as follows:

	Galvanized arm.	Untreated arm.
1. Ten days' treatment to left arm.....	17° gain.	12° gain
2. Seven " " to right "	15° "	10° "
3. Seven " " to left "	7.4° "	0.9° "

The galvanized arm made almost double the progress of the other (1 : 1.72).

Under faradism there was no gain perceptible, and under massage there was a positive loss.

I know of no other accurately measured, scientific test under proper conditions which demonstrates so perfectly the power of the constant galvanic current to promote nutrition. It would add greatly to our knowledge if similar observations were made. And it is undoubtedly the catalytic effect of the electricity which is responsible for the nutritive changes. These are certainly of the greatest importance in a large number of cases, especially in all forms of paralysis, where it is important to keep the muscles strong. It is undoubtedly through its catalytic action that Galvanism produces effects in nervous diseases—if such effects are obtained. It is one object of this discussion to elicit the experience of those present as to these effects. I have never seen a case of organic disease of the brain or spinal cord which I could consider cured by the application of electricity. Such cases sometimes improve under treatment for a time, and then grow worse in spite of it. Others do not improve at all. Perhaps it is well to be more definite in statement.

In diseases of the brain, such as cerebral hemorrhage, sclerosis, abscess, tumor or embolic softening, as well as in all forms of insanity, I consider electrical treatment useless. It cannot affect the pathological process which causes the symptoms. In diseases of the spinal cord it is usually recommended and often applied. Roughly, we may divide these diseases into (1) inflammatory destructive lesions of the gray matter, and (2) sclerotic processes. In the first class, of which disseminated myelitis and infantile paralysis may be taken as types, there may be an object in reducing congestion; but it is not certain that this can be accomplished for any length of time by electricity, as it can by counter-irritation or cupping. After the acute stage is over, spontaneous recovery will occur in greater or less degree in many cases. Is this aided by the application of electricity to the spinal cord? I have yet to be c nvinced that it is, though I admit that I still employ the agent in deference to the opinion of certain authorities. In the second class, of which locomotor ataxia is a type, it is theoretically difficult to assign any effect upon the sclerotic process of a change of molecular state. And, practically, it seems to me that few definite results can be affirmed regarding the effects of its application. Ataxia and spastic rigidity do not appear to be removed either temporarily or permanently, and its analgesic qualities are very often disappointing. In spinal affections, therefore, it seems to me that experience does not confirm the statements of some text-books and of those whose interests lie in the direction of its use.

This experience conforms to that of such a careful observer as Gowers, who, in his recent text-book, states that electrical treatment fails in his experience to affect the progress of organic nervous diseases.

Another question of importance is, to what degree the electrical state is induced in deep-lying tissues such as the brain and spinal cord? The body is not homogeneous and the power of conduction of different tissues varies greatly. If two pipes lead out of a reservoir, one free, the other plugged with rubbish, the water will seek the easy outlet to the exclusion of the other. To rely upon the diagrams of the diffusion of electric currents in the body is to be misled. Muscle conducts easily, bone less so, least of all the nervous tissue, which is peculiarly insulated by its fluid surroundings. The result must be that but a small fraction of the current reaches the nervous organs in comparison with the amount applied. Just how much does reach them has never yet been accurately determined, and cannot be, from the nature of the case, in a state of health.

Recently the spinal cord and brain have been laid bare by surgeons. It would be profitable in future, in appropriate cases, to determine by accurate electrical measurements to what extent currents sent through the body affect these exposed parts of the central nervous system. There is no reason to suppose that such experiments would be dangerous.

In peripheral nerve lesions many of the objections urged against the use of electricity in affections of the central organs are obviated. It is possible to localize the application and to determine by the sensations and motions produced just what nerves are affected. It is not improbable that favorable nutritive effects are produced by the increased circulation and more rapid chemical changes induced by the agent. It would be interesting to ascertain definite time results in the treatment of these diseases. Is the duration of a lead palsy shortened by the application of a constant current? Is the course of a facial paralysis in any way affected by its use? I have been much disappointed by the lack of rapid results in the former. I have seen the latter go on to the most severe form, with a permanent paralysis, in spite of the most careful applications of electricity. Many cases of both diseases get well. Does electricity aid the cure?

In neuralgia the galvanic current is doubtless of service, the palliative effects of the positive pole being proven. The rule proposed by Dr. Gibney, of increasing the current until the patient has peripheral sensations in the area of distribution of the nerve treated, seems to me of great value, for unless such sensations are perceived it is unlikely that the nerve is really brought into a state of electrification. If the spinal cord is really excited by the current, why should not general peripheral sensations be produced? It is rarely that I have succeeded in causing them, and I do not think they are elicited in the usual method of application.

b. Cataphoric Effects.—The power of electricity to promote osmosis is well proven. A transfer of substances from the positive to the negative pole through intervening organic tissue can be made. This is termed a cataphoric action. It has been used of late in the production of local anæsthesia and for the quieting of neuralgic pain; cocaine, morphia and aconitia having been brought into direct contact with painful nerves in this manner. As a method of treating neuralgia this is of distinct service, as has lately been proven by Dr. Peterson before this Academy. Medicated electric baths, which might be arranged on this principle, cannot be at present commended, since the dosage of the drug thus employed is wholly uncertain.

c. Electrotonic Effects.—It has already been stated that the application of electricity produces a state of electrification in the molecules of the body. This state varies under the different poles of the battery, and each pole is supposed to produce an effect the exact reverse in kind from that under the other pole. These opposite states are known as anelectrotonus and katelectrotonus. It is not necessary for us to determine whether the state produced is due to a parallelism of molecular vibration, comparable to that occurring in polarized light, or whether it is a state induced in the dielectric, the impalpable ether surrounding the molecules. Suffice it to say that two electrotonic states exist, one at each pole, and that the tissues between the poles share in these states in the direct ratio of their nearness to the poles.

The sudden production of either state excites violent molecular movements in the tissues, and these become doubly violent if either state is suddenly replaced by its opposite.

Each tissue manifests its irritation in its own manner, the muscle by contraction, the motor nerve by sending a motor impulse to the muscle, the sensory nerve by transmitting a sensory impulse to the brain. Hence to excite tissues to functional activity sudden changes in their electrotonic state are produced by suddenly closing or opening or reversing the constant galvanic current. The last-named procedure, reversing the current, or using voltaic alternatives, is necessarily the most active excitant of all. No one can deny the beneficial effects produced by exciting the functional activity of the various organs, especially when, as in paralysis, the organs cannot be voluntarily set to work; for exercise aids nutrition, promotes the circulation and assists metabolism. It is probable that no other method equals this in these respects, massage being decidedly inferior. The electrotonic effect upon the vessel walls is also proven, for a decided dilatation of the smaller arteries can be seen after an application; and when this condition has passed off, if the part be immersed in warm water, the local redness becomes again manifest. This has been ascribed to the chemical changes set up by the catalytic action of the current, but the fact that it is more intense at the negative pole demonstrates that the result is due, in part, at least, to the electrotonic state produced; and the fact that it is caused by a faradic current, which has no catalytic effect, confirms this statement. The effects of faradism are exactly the same as those of a very rapidly interrupted galvanic current. Farradism is indeed nothing more than a weak galvanic interrupted current reinforced by magnetic induction. The effects of faradism are, therefore, wholly electrotonic effects, never catalytic or cataphoric. Its convenience in being produced in a portable apparatus is its only advantage over voltaic alternatives. The difference of response to the faradic current from that of voltaic alternatives, in conditions known as the reaction of degeneration, is not to be ascribed to any difference in the nature of the current, but only to the fact that the degenerated muscle will not respond to changes of state so rapidly produced. Since muscular contractions are desired in the treatment of paralysis, it follows that faradism is useless unless the muscles act to it.

Admitting the great use of interrupted currents in exciting tissues to activity by producing changes of electrotonic state, can further claims be allowed? There is one which has already been alluded to in dealing with static electricity, namely, the reflex effect of surface irritation. It is not unlikely that changes of circulation or of molecular state—very beneficial in character—may be excited in central organs by such reflex irritation. It is evident, then, that the only possible effect admitted to occur from an application of static electricity can be produced equally well by interrupted currents.

To sum up the facts here presented we may say that—

1. Static electricity offers nothing beyond an interrupted galvanic current, and fails to furnish those effects which are most desirable in the treatment of disease.

2. A constant galvanic current can produce chemical changes which aid nutrition, or destroy tissue according to the strength employed.

3. A constant galvanic current can transfer medicines into the body from without.

4. An interrupted galvanic current, or a faradic current, can excite various organs to functional activity, thereby aiding their nutrition.

5. It is questionable whether the pathological state causing organic diseases can be in any way influenced by electricity.

6. If functional diseases are benefited, it is in an uncertain manner; it being undecided whether it is by influencing the molecular condition, the chemical changes, the circulation or the electrical state of the organ affected—or by the state of mental expectation induced. The agent is therefore used empirically, and the physiological indications for it are as yet uncertain. As a therapeutic agent its use is very limited, and carefully balanced scientific observations are still needed to establish its proper sphere.

It has been the object of this paper rather to sum up certain facts as opposed to tentative theories than to state anything new. It is also the object to elicit expressions of opinion of the use of electricity in therapeutics—based upon the experience of those who have given it a careful trial. All reference to the use of electricity in diagnosis has been purposely omitted.

I cannot, however, close without stating that after the constant use of electrical treatment for the past six years in dispensary and in private practice, I have been disappointed in the results obtained. And I cannot ascribe this lack of result to any defect in the applications, for they have been made with care, with the best of apparatus, and with exact galvano-metric measurements, according to the methods described by such authorities as Erb, De Watteville, Benedickt and Beard. My experience coincides with that of Gowers, that the therapeutic effects of electrical applications have been much exaggerated and are really very limited and quite uncertain.—*Medical News.*

DIPHTHERIA.

By Elizabeth Stow Brown, M.D.

Recent literature has been rather more than usually prolific upon the ever fruitful theme of diphtheria. It has been wisely said that diphthera presents itself to the physician in three types: cases that would recover without any treatment; cases that will be fatal in spite of the most skillful treatment, and cases in which treatment may change the termination from death to recovery. Unfortunately, with our present human limitations the physician cannot be sure to which category his special case may belong; so that it becomes his duty to treat every case as one of the third class.

Dr. Abraham Jacobi has recently added another valuable paper to his previous writings on diphtheria. The author urges most strongly his claim for preventive treatment, of isolation for the sick, of separation of the well children of the family from other children, of instructing school-teachers how to examine throats, of occasional inspection of the throats of servants, and of inspection and disinfection of public places and vehicles. Prevention for the individual is most successfully secured by keeping the mucous membranes of the upper air passages in a healthy condition. Large tonsils should be excised, operations upon the mouth during an epidemic should be postponed, and the presence of glandular swellings around the neck must not be disregarded. If every eczema of the head and face, every stomatitis and rhinitis, from whatever cause, were relieved at once, most of these glandular swellings would be avoided. The author believes that all attempts at forming indications for the treatment of patients with diphtheria, based upon the preconceived or acquired idea as to the nature and causes of diphtheria, are all futile. While there are certain indications resulting from the characteristics common to all types of the disease, every case must be treated on general principles, which must be applied to the prominent individual features. Elevation of temptature, convulsions, vomiting, quick and feeble pulse, are symptoms to be met with all the tact of the skilled physician. The complications that arise, especially the usual signs, are to be treated on the principles acknowledged best for those conditions.

The local treatment of the pseudo-membrane the author considers of great importance. He believes that to regard the false membrane as an excretion which needs no interference, is incorrect. Whatever is done to the membrane must be done without violence of any kind. Applications to pharynx or tonsils made without proper leisure and accuracy may scratch off or change the epithelium surrounding the diphtheritic spot, and thus favor the spread of the deposit. If nasal injections be found advisable, they can be made to wash the posterior pharynx and tonsils sufficiently, so that applications through the mouth may not be necessary. Moreover, this nasal application is easier, meets with less objection and gives rise to less exhaustion than the forcible opening of the mouth. Where it is possible to make local applications without difficulty, tincture of iodine may be applied several times daily, or a drop of rather concentrated carbolic acid. Of powders, the author considers calomel the only one not absolutely contra indicated. Everything dry irritates and gives rise to cough or discomfort. Moreover, whatever has a bad taste or odor, as sulphur, iodoform or quinia, should be avoided in local applications. For the purpose of dissolving membranes, papayotin or trypsin in solution may be injected, sprayed or brushed on the affected tissues.

The inhalation of steam helps to loosen the membrane where it is not too firmly coherent with the surface beneath. In such cases steam may favor the extension of the process by softening the hitherto healthy mucous membrane. Steam may properly be mixed with medicinal vapors. The secretion of the mucous membranes is sometimes quite abundant under the influence of steam, and is also increased, like that of the skin, by the drinking of large quantities of water.

The treatment of dipththeria of the nose consists in persevering disinfection of the mucous surface. Disinfectant injections must be continued every hour, for one or more days. If they are well made the consecutive adenitis is soon relieved and the general condition improved. Where the whole cavity rapidly fills with membranous deposits injections are unsuccessful and forcible treatment is required. A probe dipped in carbolic acid or wrapped in absorbent cotton, moistened with carbolic acid of 50 or 90 per cent., must be pushed through the mass until the injection can be used. The author enjoins upon the physician the importance of seeing that the nurse makes the injection properly, and of insisting upon her telling him at every visit that the fluid returns through the other nostril, or through the mouth, or is swallowed.

Besides sepsis, the two great dangers to be met in diphtheria are heart-failure and strangulation. The danger of heart-failure may set in at an early period of the disease, and must be constantly guarded against. Absolute rest and quiet are essential to the safety of the patient. The fatal results from excitement, sudden changes of posture, or from exertion, are but too familiar. Digitalis, strophanthus, spartein, besides camphor, alcohol and musk, must not be postponed till feebleness and collapse have set in. The best internal stimulant, in urgent cases, is Siberian musk, in powder or in mucilage.

Paralysis during convalescence, or intense anæmia long after apparent recovery, have their distinct indications for treatment.

In regard to the internal medication for diphtheria, the author advocates, rather guardedly, the use of the chloride of iron and the bichloride of mercury. He thinks that children with naso pharyngeal diphtheria, large glandular swellings, feeble heart and frequent pulse, intense sepsis and irritable stomach, especially cases in which only large doses of stimulants, general and cardiac, can promise any relief, are better off without iron. The author's observations of the last four years incline him to modify his former conviction of the utter uselessness of internal medication in laryngeal diphtheria.

Dr. J. Lewis Smith considers the pathology and treatment of sudden heart-failure in diphtheria in a recent paper read before the New York Academy of Medicine. The author shows the improbability of many of the theories that have been advanced to account for this sudden heart-failure. Endocarditis, granulo-fatty degeneration of the muscular fibres of the heart and cardiac thrombosis, are dismissed as unsatisfactory explanations. The theory of deficient innervation, or a true cardiac paralysis, Dr. Smith thought the most tenable. In discussing the etiology of cardiac paralysis, the author considers it as identical in nature with other forms of paralysis after diphtheria, and he thinks that clinical facts seem to indicate that a ptomaine is the direct cause of the paralysis, especially in cases occurring early and quickly cured. But he considers that the marked degenerative peripheral and central nerve lesions so frequently present in those who have died with diphtheritic paralysis, prolong and intensify the paralysis, and are in some instances its primary cause. The treatment of cardiac paralysis requires prompt and active remedies. The patient must be kept quiet, alcoholic stimulants administered—brandy in hypodermatic injections, ammonia, camphor, musk and electricity. Strychnia is endorsed as an efficacious nerve stimulant in the various forms of diphtheritic paralysis.

Dr. G. E. Hubbard records his results, which have been most satisfactory, with a solution of sulphuret of calcium, in the local treatment of diphtheria. The solution is prepared as follows : Of lime, 1 part; sulphur, 2 parts; water, 20 parts. Slake the lime with some of the water, then add the remainder and the sulphur; boil to 12 parts and filter. It occurred to the writer that if this solution was so effective in the treatment of scabies, it might serve a good purpose on the pseudo-membrane of diphtheria. Under the use of the solution in spray, the diphtheritic patches undergo a change in a few hours, in some cases disappearing entirely in a day. The writer believes that this solution does much towards preventing constitutional infection. Its stimulant, laxative and somewhat diaphoretic and diuretic action are quite marked.

Dr. J. Henry Fruitnight recalls the familiar fact that most of the remedies used with the intention of producing constitutional effects, also, to a certain extent, act locally, as the chloride of iron, the chlorate of potash and the bichloride of mercury. The writer calls attention to the local action of hyposulphite of soda, a remedy which had been used in the past for its constitutional effect alone. The drug is administered in the strength of ʒ ss. to ℥ i., the dose ʒ i. every two hours. When the patient was too young to comprehend the direction to hold the dose in the mouth, and when the deposit is confined to the buccal cavity the solution can be also used in the atomizer.

Dr. George B. Hope believes that in peroxide of hydrogen will be found, if not a specific, at least the most efficient topical agent in destroying the contagious element of diphtheria and limiting the spread of its formation, and at the same time a remedy which may be employed in the most thorough manner without dread of producing any vicious constitutional effect. When uncertain results have attended the use of the peroxide, the writer claims that one or both of two reasons are the explanation. These are : 1. That improper cases are selected for experiment. 2. That the preparation is imperfect or its topical application ineffective. Inasmuch as the efficacy depends upon the ozonized oxygen in solution, Dr. Fruitnight uses the full strength of the officinal preparation of fifteen volumes. A steady coarse spray, with an air-pressure of twenty pounds or more, will, in a few moments' time, produce a more positive action than is accomplished by prolonged efforts to reach the fauces by means of cotton applications. The force of the spray should be sufficient to cleanse at once the surface accumulations. Immediately on contact with the peroxide a white, cloudy coagulum is formed on and about the diphtheritic patches, readily floated off and exposing a more sharply defined and a flatter, smooth and whiter base. Properly speaking, there is no liquefaction of the exudation, but the decomposition of the inflammatory products is so complete that the cells are broken up and freed from the entangling net-work beneath. Two applications a day, in the great majority of cases, should be sufficient, if thoroughly performed, to arrest all danger of extension and accomplish the gradual resolution of the local formation.

Dr. Edgar S. Barnes, of Eye, Suffolk, England, in an address before the East Anglican branch of the British Medical Association, has given some very interesting points upon the distribution and causes of diphtheria in England. The writer presents the results of his investigations (as a "Medical Officer of Health") in fifty separate outbreaks of diphtheria, extending over a period of thirteen years, and embracing 223 cases, of which 40 were fatal. The first point to which attention is called is the geographical distribution of diphtheria. The favorite habitats of diphtheria are different from those of scarlet fever. Scarlet fever, like most infectious diseases, is most prevalent and most fatal in districts containing the most dense population, with the single exception of London, where the facilities for isolating early cases hold the disease to some extent in check. Diphtheria, on the contrary, is most prevalent in the comparatively thinly populated districts of the southeastern and eastern counties of England, in Cornwall, Somerset and North Wales, avoiding the populous manufacturing and mining centres, and the northern counties of England. The agency which favors the development of diphtheria in rural districts is probably the dampness of soil, caused by want of suitable systems of drainage, combined with filth in the form of decomposing animal matter. Dr. Barnes illustrates his paper by a colored map of England, showing the areas of greatest frequency of outbreak, the degrees of severity of the epidemics, the characters of the soil and the density of the population. Some striking instances are related of the connection of filth and defective drainage with spread of the disease. The author also regards school attendance as one great agent in the diffusion of the infection. The writer considers the question of the bacterial origin of diphtheria as still in an unproved state, though, for the sake of completeness, he reviews the claims of the various bacteriologists. The writer remarks that, in other specific diseases, we never find a preceding period of an undeveloped disease, whereas, in outbreaks of diphtheria, it is not uncommon to find that sore-throats have prevailed for sometime previously, which have not presented the true characters of diphtheria. In three of the outbreaks which are recorded in this paper this was observed by the author. He adds that in other specific diseases—for example, small-pox, scarlet fever or measles—such previous outbreak of nondescript cases is not observed. To the writer's mind this points to a poison gradually developed by insanitary conditions, rather than to a definite specific germ, be it bacterium, bacillus or micrococcus.—*Medical Analectic.*

IS APOMORPHINE A SAFE EMETIC?

By John Brown, M.B., B.Ch. Vict., etc.

Recently the above query has appeared in the *Journal.* I wrote an article on "Apomorphine, a Safe, Certain and Quick Emetic," which appeared in the *Journal* for May 12th, 1883, p. 907. It occurred to me that it might be of interest to those correspondents and others if I gave a brief account of my further experience of this most valuable emetic. There are few, if any, of the new drugs introduced into the *British Pharmacopœia* which have sustained the high opinion of their therapeutical value with such unvarying success and with so few failures as apomorphine.

The following ten cases are taken *seriatim.* I prepare my own solution of apomorphine as follows: Apomorphin. chlorid., gr. j.; sp. vini rect. ℳ20; aquæ ℳ110. Each 10 minims equals one twelfth of a grain of the alkaloid.

Case 1.—A. B., aged about 30; 10 minims administered hypodermically was followed in five minutes by free and copious vomiting. No bad after-effects.

Case 2.—J. H., aged 5 years, swallowed ammonia; 2 minims were given; in three minutes afterwards there was free emesis. The child did remarkably well.

Case 3.—J. J., aged 4 years, swallowed a clay pipe. Dr. S. sent for me to give apomorphine, as other emetics had failed. I gave 3 minims, and in six minutes, without any previous nausea, vomiting followed.

Case 4.—A. E. B., aged 2 years, supposed to have swallowed a farthing; 2 minims were administered; this was followed in six minutes by vomiting.

Case 5.—C. M. B., aged 14 months, swallowed a button; 2 minims were given; in six minutes copious vomiting followed.

Case 6.—Mrs. M., aged 24, suffering from most violent spasms of the laryngeal muscles due to irritation of the stomach from a mass of indigestible food; 10 minims were given, and produced very free vomiting, which was repeated two or three times. The result was speedy relief of the spasms; no prostration nor collapse.

Case 7.—H. M., aged 4 years, was supposed to have swallowed a quantity of indigestible fruit; 3 minims were given, and in eleven minutes free emesis followed.

Case 8.—W. C., aged 3½ years, suffering from croup; 2½ minims were given, and in fourteen minutes free emesis followed.

Case 9.—D. L., aged 2½ years; gave 2 minims; a small portion oozed out from where the needle was inserted, and vomiting did not follow for twenty-eight minutes, which is the longest interval I have ever observed, probably owing to the smallness of the dose, which might have been from 1-100th to 1-120th of a grain of the alkaloid.

Case 10.—Miss M., aged 4 years; 4 minims were given and were followed by vomiting in eighteen minutes.

The average interval between the hypodermic injection and the emesis is 10.1 minutes. As a rule, the vomiting only occurs two or three times at short intervals. The depression is only what might be expected after an ordinary vomiting. I have observed no case approaching fatal or even serious collapse. Only two of the cases were adults, the others were very young children. Cases 4 and 5 were my own children, and I have the greatest confidence in giving it hypodermically to any of my children who may require an emetic. Every one must have observed how difficult it is to make an infant or any child under 4 years vomit by giving emetics by the mouth. I have been surprised that authors on children's diseases do not recommend apomorphine hypodermically. Dr. Angel Money's work on *Treatment of Diseases in Children* is very excellent, but I find no mention of apomorphine as an emetic. I believe there is no emetic "so safe, certain and quick" for children. In adults ordinary emetics usually succeed; not so in children. The cases reported in which collapse occurred were adults. It may be that apomorphine may occasionally cause collapse—although I have not observed any case—in adults, yet be perfectly safe for children, similar to the action of chloroform in adults and in children. Apomorphine is the emetic *par excellence* for children when given hypodermically.—*British Medical Journal.*

PROSTATIC ENLARGEMENT.—Importance is attached to a new operation for the relief of this condition, devised by Dr. Hunter McGuire, of Richmond. The operation is similar to supra-pubic cystotomy for stone. The only difference is that he made the opening into the bladder as low down on its anterior wall as possible, and left the opening in the skin at the upper end of the incision. A drainage-tube was kept in for a short time. The result was that the patient passed his urine through the artificial urethra thus formed. The artificial urethra did not leak, nor did the urine dribble away, no matter what the position of the man's body was. The urine was retained for several hours, often from four to six, and then passed in a strong stream thrown several feet from the body, the last coming in jets as from a natural outlet. The improvement in the patient upon whom he had done this operation had been wonderful. The artificial urethra or fistula had the same relation to the bladder that the spout of a coffee-pot has to the pot.—*Clinical Record.*

WARTS.—Kaposi suggests the use of one part of bichloride of mercury dissolved in thirty parts of collodion, a little of the solution being painted on and around the base of the wart once daily.—*Albany Medical Annals.*

REVIEWS AND BOOK NOTICES.

The Theory and Practice of Obstetrics, Including Diseases of Pregnancy and Parturition, Obstetrical Operations, etc. By P. Cazeaux, remodelled and rearranged by S. Tarnier. Eighth American Edition with an Appendix by Paul F. Murdé, M.D., with Chromo Lithographs and and other full-page plates, etc., etc. Philadelphia: P. Blakiston, Son & Co., 1012 Walnut St., 1889.

This is a ponderous volume of 1220 pages, very unlike the "Cazeaux" we knew in our student days. The testimonials borne on the fly-leaf from Fordyce Barker, M.D., LL.D., Wm. Goodell, T. Gaillard Thomas, M.D., and W. T. Lusk would seem to be enough without further expression of opinion as to its merits.

Two hundred and thirty-five of the pages are the addition by Dr. Mundé on the hygiene and therapeutics of pregnancy, labor and the puerperal state, posture in obstetrics, external obstetric manipulation, anesthetics, antisepsis in obstetrics, puerperal fever, puerperal peritonitis and cellulitis, cervical and perineal laceration, primary perineorrhaphy, extra-uterine pregnancy, obstetric and gynecic jurisprudence.

The fashion of the day to turn our back on the French School cannot prejudice a good student against Cazeaux's great book, for it has has not only been *the* text-book in the United States, but many a course of obstetrical lectures by excellent teachers in our medical schools had their foundation in this book, and for large part could be followed word for word.

Tarnier was chosen to keep the work abreast of the present state of obstetrical science, and his additions are distinguished by a smaller type employed.

We have had reason to consult Cazeaux & Tarnier, and we have found the matter up to our recent knowledge, and what is more, the digest of the material is consonant with the older text in lucidity of manner. It is a rare thing to find a writer with the ability to rewrite and interpolate a great book without diminishing its authority and to make his revisions harmonious and vitalizing, but Tarnier has done this for Cazeaux, and the thought of retiring the volume with many another old classic, must be some years in the future.

The illustrations are of variable character, sufficiently modern and enlivening, if not valuable for the elucidation of the text; but the book of the day must have illustrations, and most students will easily fall in with the spirit of the work and from the text be quite able to explain the illustrations. A 1200 page book is almost too heavy for one volume, but most readers prefer it in this shape. Our endorsement of "green-back" would hardly be less superfluous than our commendation of Cazeaux & Tarnier.

THE OPERATIONS OF SURGERY: A Systematic Hand-Book for Practitioners, Students and Hospital Surgeons. By W. H. A. Jacobson, M.B., F.R.C.S. One hundred and nineteen Illustrations. Philadelphia: P. Blakiston, Son & Co. [Price $5.00.]

The aim of the author is to furnish a book more comprehensive and fuller in detail than works now before the public, and so has concluded his subject in a stout volume of over 1,000 pages. It is admirably adapted for use in reviewing an operation to be done, and is brought up to the latest date in special operations. "The Medical and Surgical History of the War," and "The International Cyclopedia of Surgery" are freely quoted, and there are many signs of recognition of American surgery which trans-Atlantic surgeons often neglect. This last feature will make it all the more valuable to American surgeons, especially to those of us who, although not special surgeons, have to do surgery when it falls to our lot.

The illustrations in this volume are not of a noteworthy character, many of them being the classical but threadbare ones so familiar to readers who use Fergusson's Surgery. Good illustrations add largely to the value of a book intended to elucidate operative surgery, but we do our author the credit of saying for him that his descriptions are simple, accurate and graphic.

There is a great deal of matter in this volume which has found its way for the first time in a text-book, and its presentation here in this shape puts before the reader enough from which to make a selection without the weariness of research in the medical journals.

As a part of the working outfit of the surgeon's library we regard the volume as most valuable, and hereby commend to that increasing class of doctors who, in our smaller towns, are often confronted with serious surgical operations, and who, by the way, are doing some most excellent surgery.

The International Medical Annual and Practitioner's Index: A Work of Refeeence for Medical Practitioners. Edited by [a corps of twenty-six writers.] Seventh Year. New York: E. B. Treat & Co., 711 Broadway New York, 1889. [Price $2.75.]

The Annual gives us eight introductory pages on New Remedies, by Percy Wilde, M.D., discussing in a cursory way the difficulties of determining the actions of drugs from a purely physiological standpoint, the author choosing the rather pedantic appellation therapeutician for therapeutist. Then, beginning the new drugs with acetanilide—and closing with *Vernonia nigritiana,* he includes many that are well-known, but introduced for new therapeutical effects, and includes others like *Lamium* (dead nettle), the reputation of which will hardly survive the issue of the volume, and Gledistchine with the rather out-of-date information that "a committee has been appointed to investigate the matter." The editor also gets in "Stenocarpine" as an active principle of the "tear-blanket tree," without suggesting any connection between it and "Gleditschine,"

Massage and electricity are treated at some length, bringing us to Part II., which considers new treatment. The plan of this part of the book is to give remedies under the various diseases; for instance, "Abdominal Injuries" includes suggestions as to diagnosis followed with treatment both surgical and medical, running through the list alphabetically.

While there is much that is standard and worthy of permanent record, we must say this volume lacks freshness and careful study on the part of the editor. The multiplication of such books serves to confuse and mislead and weight down our book-tables, and publishers must not be disappointed if they find they receive only a transient favor.

Bees are said by the *Lancet* to be unerring connoisseurs of saccharin substances. To the human palate cane-sugar, beet-root sugar and saccharin are pretty much alike, but bees will have nothing to do with the last two. They are partial to glycerin, but discriminate against impure samples.—*Albany Medical Annals.*

MINUTES

—OF THE—

THIRTY-SIXTH ANNUAL SESSION

——OF THE——

Medical Society of North Carolina.

ELIZABETH CITY, N. C., April 16, 1889.

FIRST DAY—AFTERNOON SESSION.

Dr. Julian E. Wood, Chairman of the Local Committee of Arrangements, called the meeting to order.

Rev. E. P. Wilson, of the M. E. Church, South, opened the session with prayer.

Vice President Dr. Geo. W. Long, introduced E. F. Lamb, Esq., who delivered the following

Address of Welcome.

Mr. President and Gentlemen of the Medical Society of the State of North Carolina:

To me has been assigned the pleasing office of welcoming you to our Cypress City. Surely no task could be more grateful to me, if task it can be called, for I am of medical lineage, and I am bound to the members of the profession by the ties of affection and friendship. But apart from my personal relations to the profession of medicine it awakens my most profound respect, from its hoary antiquity, its offices of kindness, its ministrations in the hours of direst need, and from the learning and fidelity of its profession, and because they have done more charity and more to alleviate the physical and mental ills of life than any other class in the ranks of men. Therefore, and for these reasons, I esteem it an honor that my friends have done me. And in obedience to their desire I welcome you to our hearths and homes with warm hearts and outstretched hands.

Your profession, gentlemen, comes down to us from hoary antiquity that dates beyond the records of profane history. And if for nothing else it is entitled to our homage and respect, its venerable age and the long line of illustrious men that have illustrated its history should command our veneration. Turning aside from profane history, in looking for its origin, we turn to the sacred annals, and we there find in the early part of the first quarter of man's history a veritable case of autopsy so well established by recorded and circumstantial testimony that we can well conclude that it is the first case in the history of man in which medicine dawns.

It is the case of fratricidal murder recorded in Genesis in which Cain murdered his brother, Abel. Now, it is borne out by the circumstances that in that case his father was called, or went uncalled, and ministered to his son *in extremis*, or if not in time to administer such relief as parental kindness might suggest, he certainly made a post-mortem examination of the case. Now this was probably the earliest case of medicine, and it established beyond controversy that the profession of medicine was coeval with humanity, and that the first doctor was our progenitor. What great strides your profession has made since then!

It has been the brave vanguard of defence wherever the wail of suffering humanity has been heard. By the bed of sickness and sorrow, in the scourge-stricken seat of epidemics, in regions where man carries his life in his open palm, amid the desolation and carnage of war. Wherever there is physical suffering there the physician is found performing the office of the good Samaritan, pouring the oil of healing into ghastly wounds, at the peril of his own life. This is the saintly and heroic record of that profession whose members I have the honor to address.

Antedating profane history it is as old as man, responding to all the duties of social life and relieving distress at the sacrifice of personal comfort, it is noble as virtue. Braving danger at the risk of life, you are the heroes of humanity. But no poor words of mine can add to the deserved homage of your profession among men. Deeds proclaim its usefulness. One deed alone would rank its members as the great leaders in the battle of life, colaborers with Him who created human life in their admitted prolongation.

Lord Macaulay somewhere in his brilliant historical writings, distinguished alike for historical research, accurate statement and luminous diction, has said that within a period of fifty years medical science has added ten years to the average duration of humae life. This comforting statement has never been challenged. How comforting that, in a thousand years, which are but as a day in the computation of the Infinite, we shall, thanks to your laborious and learned profession, be a race of stalwart men of eight or ten hundred years and rival the antediluvian patriarchs in longevity.

These remarks, gentlemen, are not made with the idle purpose of pandering to your vanity. They are honest sentiments plainly expressed. Your noble profession is to day not only abreast, but in the lead, of all the learned professions among men in progressiveness, in energy and activity, in earnestness and usefulness, not only is it the oldest of the professions, but it is to-day the most vigorous and alert.

Age, which subdueth all things earthly, has not touched the stalwart limbs of the grand science you represent. Venerable in age, it is yet youthful in fact, as when it came into existence at the dawn of humanity. Age is powerless to paralyze its limbs or impair its usefulness. We constantly see the new and wonderful discoveries in medicine for the relief of suffering humanity.

Our country, though young as compared with many of the long established nationalities of the old world, numbers in its galaxy of medical lights names that will live as long as Harvey and Jenner and Cooper and Abernethey are remembered. Generations yet unborn will honor, as we do, the memories of Rush, and Wood, and Jackson, and Simms, and Flint and Gross, as well as numbers now living whose fame has followed the sun around the world. Medicine has in all ages been on the watch to gather for her alembic from every source of knowledge and observation and experience. She bends her ear to the bedside, her eye to the microscope and her hand to the scalpel in every land and under every sun that she may the better be fitted to perform her high mission of relief and prevention of disease.

Your Association is a new evidence of development in North Carolina. But, with all these beneficent ministrations, it is sad to say that your profession, as all professions, is not exempt from the common lot of disparagement. Let witlings deride: It is the test of virtue and manhood. Let witlings deride: Truth will triumph in the end, and the consciousness of coöperation with God in good deeds to men will be its own blessing.

Let witlings deride:

When free from disease,
In their hours of ease;
Let pain and anguish wring the brow,
O, ministering angel thou.

Again, in the name and behalf of all our citizens, I bid you welcome to our plain and unostentatious hospitality—welcome to our hearths and homes—sincerely welcome!

Response.

Dr. George W. Long, in response, said:

It affords me inexpressible pleasure to accept, on behalf of the North Carolina Medical Society, this kind invitation to the hearths and to the homes of the citizens of Elizabeth City. We not only desire to return to you our sincere, hearty thanks for your cordial words of welcome, but also to express to you, and through you to the good people whom you have the honor to represent, our deep regret that the location of your city, in the extreme northeastern section of the State, and the unusually severe weather, prevents a larger assemblage of our medical men at our annual festival, in order that they, in common with us, might not only enjoy your hospitality, but that you and your people might see more of us, more of our work, our aims and our purpose. That you might be brought in contact with that large class of gentlemen, that large class of self-sacrificing, self-denying defenders of imperishable truth, we desire to extend to you the courtesies of this hall, and if any of your people or friends can find it convenient at any time to visit our meetings and our sittings, you will always find a cordial welcome.

I further desire to state that our worthy President, Dr. W. T. Ennett, has been taken suddenly ill on his way to this meeting, and while he is now better, his physician deems it inexpedient for him to come on and attend to his work. The Vice-Presidents are all absent with the exception of myself, and of course the honor of presiding over this Convention devolves upon me, wholly inexperienced, and not even well acquainted with the By-Laws of our Society, I am sorry to say. But I hope to have the forbearance and the coöperation of every member present, and I am sure I will get it, for I do not think that any one would come out in such weather as this unless he really meant to help the work along.

Session Formally Opened.

Dr. George W. Long then declared the Society open and ready for business.

Dr. T. D. Haigh said: I was summoned to the bedside of our President, Dr. W. T. Ennett, in consultation with Dr. Wood and Dr. Ellis, at Garysburg, and I think I can say to the Association that I never saw any one who seemed to feel such deep regret at the loss which had come to himself in not being able to preside over this body. Dr. Wood, who stayed with him part of the night before and yesterday, and his attendant physician, Dr. Ellis, of Garysburg, as well as myself, advised him that it would be best for him not to attempt to come, and advised him to return home to-day. The Association, I know, would like to express to him something of their sympathy and their regret at his inability to be present, and therefore, sir, I beg leave to introduce this resolution:

Resolved, That this Association has heard with sorrow of the sickness of our President, Dr. W. T. Ennett, and that the Secretary be requested to tender to him, by telegram, our deep sympathy, expressing the hope that he will soon be restored.

The resolution was carried unanimously.

Committee on Credentials.

Drs. A. G. Carr, W. H. Whitehead, R. S. Young.

Roll Call.

The roll was then called and the following gentlemen found to be present: Drs. George A. Foote, Warrenton; William R. Wood, Scotland Neck; Thomas F. Wood, Wilmington; Willis Alston, Littleton; W. J. H. Bellamy, Wilmington; Francis Duffy, New

Berne; A. G. Carr, Durham; P. L. Murphy, Morganton; Joseph Graham, Charlotte; T. D. Haigh, Fayetteville; George W. Long, Graham; P. B. Barringer, Davidson College; J. M. Baker, Tarborough; C. M. Pool, Craven; W. L. Crump, South River; J. A. Reagan, Weaverville; H. M. Fletcher, Shufordville; R. S. Young' Concord; H. P. Murray, Plymouth; G. W. Purefoy, Asheville; B. F. McMillan, Plain View; J. A. Hodges, Fayetteville; J. M. Hays, Oxford; S. L. Montgomery, Monroe; Mayland Bolton, Rich Square; J. H. Dodd, Clayton; D. B. Zollicoffer, Garysburg; H. H. Harris, Wake Forest; W. H. Ward, Plymouth; James M. Dunlap, Ansonville; J. E. Brothers, Stantonsburg; L. G. Broughton, Reidsville; W. J. Lumsden, Elizabeth City; E. H. McCullers, Clayton; C. W. Sawyer, Elizabeth City; A. R. Zollicoffer, Weldon.

Report of Section on Practice of Medicine.

Dr. H. P. Murray, of Plymouth, Chairman, stated that there were four assistants in his Section, none of whom were present, but he hoped that some of them would come in on the evening train. Dr. Murray then proceeded to read his report

On the Treatment of Typhoid Fever.—(See Appendix.)

Dr. T. J. Moore, of Richmond, Va., was introduced to the Society and invited to take part in the discussions.

Dr. Moore, discussing Dr. Murray's paper, addressed the Society at length on the subject of typhoid fever, and expressed his want of faith in the germ theory, which, he said, led to pernicious medication, and had been the means of doing infinite harm. He thought we were going wrong in this State and throughout the States of the Union, not only in regard to typhoid fever, but in a variety of diseases. He did not refer to the surgical department, but to those physicians who were always trying to discover some germs, and whose treatment was based on the assumption that they existed.

The Chairman—I cannot let this opportunity pass without expressing my conviction in the rectitude of Dr. Moore's conclusions in the management of typhoid fever. I do not think that I can add anything to what he has said. I have had some little experience in that line and some very sad experience, and I very strongly endorse what Dr. Moore has said. The Society will be glad to have Dr. Haigh's opinion on this subject.

Dr. T. D. Haigh said: I cannot add anything to what has been said. In my section of country we have very few cases of pure typhoid fever, and my experience has not been very great, especially of late years.

Dr. J. A. Hodges—I rise to express my coincidence in the views of Dr. Moore as to the tentative and supposititious treatment of typhoid fever; but I would criticise the fact that a specific germ has been established for this disease, as would seem apparent from Dr. Murray's paper. Dr. F. A. Billings, a sensational microscopist, has affirmed that he has discovered one, but the consensus of opinion is to the effect that, while a characteristic bacillus has been discovered which is always present, it is not specific and will not stand the test of inoculation from the pure culture of the bacillus. This isolation of the germ, so far as determined, serves only as a positive sign of diagnostic value, and enough of its origin and history is not known to influence the antiseptic treatment of the disease, in my opinion.

Dr. Foote—The subject of the germ theory I am totally unprepared to express an opinion upon, but as to typhoid fever, I have had vast experience. I was studying with an uncle of mine who had on his plantation about 70 negroes; out of these 43 had typhoid fever and 27 died. I went up to my father's plantation and finished out my case of typhoid fever in thirteen weeks. There was not a soul on that plantation who had it, and my room was visited daily. What became of the germ that gave it to me? If it is contagious and is produced by a germ, I do not see why somebody else did not have it. I think those who advance these theories are running the thing wild. In one of the last journals I read that they are forbidding a man to lick a postage-stamp for fear of getting a germ. I think the most important thing is the treatment of typhoid fever, and not the cause. Why should a germ produce scarlet fever in one case and typhoid fever in another, etc.? If there is a germ in one instance you must admit it in all. I have a recent work on antiseptic treatment which says you must not touch a wound without washing for five minutes. I think we had better pay more attention to the treatment of typhoid fever than as to what causes it. I cannot believe in the germ theory; it is a beautiful theory on paper, but there is no end to it.

Dr. Thomas F. Wood—I hope it will not go on record that we are opposed to antiseptics either in surgery or in the practice of medicine. Whatever may be our opinion as to the specific bacilli of any disease, one thing is very certain, that modern aseptic and antiseptic means have been the agencies by which all of the successful laparotomies and all of the visceral surgery that has been done. I suppose, though, that it was a little wide of the question to introduce surgical antiseptics. I would like to make one remark in reference to typhoid fever. I will venture to say that, if we took either one of the gentlemen who have made remarks upon the subject, and gave each one of them a patient side by side in the wards of a hospital, when they came to treat these patients they would treat them with common-sense, just as if there were no bacilli—the theory would not enter into their minds. After all, when we are discussing these questions, there are always two distinct branches of the subject. First, that which makes an effort to find out the origin of the fever—a very difficult and discouraging investigation, which has baffled us from time immemorial, but a necessary work; and second, that practical part which attempts to elucidate the principle upon which the disease must be treated. I believe that in all the text-books on the practice of medicine, however much the author may be convinced of the bacillary theories of the origin of typhoid fever, you will find that the treatment is not based upon the germicidal properties of medicines, but upon the mass of clinical data. Since the great works of Magnus Huss and of George B. Wood, and others of that date, I think there has been very little advance made in the treatment of typhoid fever. We had great hopes from antipyretics, which have been so largely introduced. The anticipation was that, by reducing the hyperpyrexia we would cut short the disease. I believe that remains unproven. Immense numbers of cases are being collected all over the world, and whilst statistics are very difficult things to interpret correctly, still I believe that when they are all brought together we will find that the patients which have been treated the most conservatively will show the best results, and I believe you will find that the results will not be in the direction of any dogmatic theory. To come back to the original proposition, I believe if we, as practitioners, were to go to the bedside and have these patients in our care, that the line and course of our treatment would be dictated by the clinical aspects and but slightly tinctured with the conclusions formed in the pathological laboratory.

Dr. L. G. Broughton—I hope that what I say will be taken in the spirit in which it is given. But for the fact that doctors will differ, I should be very much surprised at the remarks of Dr. Moore and others, for all the younger members of the profession are to-day filled with the germ theory, and now we come before the North Carolina Medical Society and we hear members attacking this theory upon which our whole hopes have been built. Of course if this is your experience it will do us good, but if there is one theory in which I am an ardent believer it is that of germs. I have not much experience in this line, neither have I much theory; but I would like to relate one instance: Sometime ago, during an epidemic of typhoid fever in a certain town in Pennsylvania, Dr. Marvin was sent for to determine the cause. He was about to give up the search in despair, when the thought of the reservoir which supplies most of the town with water. He went to this reservoir with his microscope and he found the typhoid germ which he claims is to be found in all cases of typhoid fever. The question was raised, Where did this germ come from? and on inquiry it was found that in the winter previous a man was brought to the town suffering with typhoid fever and was put in a home situated on the hill beyond the reservoir and his excrements were thrown out on the snow that was at that time covering the ground, and this snow melted and passed into the reservoir. This is the case with many epidemics, and I think gives us reason to believe in a specific germ in typhoid fever. I believe, with Prof. Hough, of Philadelphia, that it is generated in the bowel. I have tried sulpho. carb. zinc in 2-grain doses with the best results—not only in typhoid fever, but in all cases where the source of infection is from a germ generated within the gastro-intestinal tract. My experience has not been great, but am delighted with it thus far.

Dr. Graham—So far as the germ theory is considered we have to go a little out of our way, whether we are on one side or the other. The theory is entirely in its infancy so far as our knowledge is concerned, and very often I feel after reading an article that I am on that side, and when I read an article on the other side I am well staisfied that I am on that side. However that may be, if it be not true, it certainly has given an impetus to surgery and to the treatment of all disease, and it is a good lesson in cleanliness. As regards the germ theory of typhoid fever, I am well satisfied that it has not been discovered; and though there are a number who treat it antiseptically and claim great results. I have never been able to find whether they cut short well authenticated cases or not. In antiseptics I am satisfied that, while they have been of great use in many cases, they have been very much abused and have been the cause of death in a number of cases. I remember a patient I was called to see in company with a doctor who was carried away by the treatment with antipyretics, and I am satisfied it was a case of collapse from poisoning with antipyretics. If we were certain of the germ of typhoid fever I do not know exactly what remedy we would use to kill it and at the sametime let the patient go free. That is the great drawback and the great danger. If we treat it with that prince of antiseptic remedies, bichloride of mercury, we find that we cannot even cut short a case of gonorrhœa with it.

Dr. Moore said that for several years he had intended to write to Dr. Thomas F. Wood suggesting that he address a circular letter to his medical friends throughout the country with pointed questions with the object of gaining from them particulars as to the laws that underlie typhoid fever. He did not know any gentleman in the South who had a better opportunity for doing this.

Dr. Thomas F. Wood—I am much obliged to my distinguished friend for his suggestion for an investigation. I believe that much could be elicited upon the subject of typhoid fever in North Carolina by correspondence, provided members would pay more attention to letters addressed to them. I would be prepared to accept the suggestion of Dr. Moore and assume, through the North Carolina Medical Journal, to issue a circular letter leaving out the question of the germ theory and restricting the investigation to the more practical point.

Dr. P. B. Barringer—The machinery necessary to carry out the suggestion of Dr. Moore was prepared already in the shape of a Committee of Inquiry, who were to tabulate questions and forward them to the members who were to bring them in annually with their answers. If any series of observations were carried out the methods of observation were likewise to be formulated so that the results would be uniform.

Dr. Thomas F. Wood—I will promise to furnish printed clinical blanks ready ruled, with nothing to do but put down figures—simply to give the morning and evening temperature, the pulse rate, respiration, etc., with a summary of observations in each case. It can be very easily done provided our friends will be prompt in replying to correspondence, and I believe that if we make the effort it can be made very valuable. The British Medical Association has brought about collective investigation. Circular letters are sent out on all such topics, and these are all tabulated and printed in the *Journal.* A great deal of information has been secured in this way.

Dr. Carr—My treament of typhoid fever is the following:

℞.—Naphthaline.............................. grs. vj.
Pulv. carbo. ligni .... grs. xij.
Quin. sulphat.............................. ʒ j.
♏. Caps. 12. From 3 to 6 capsules. All in the morning.

Antipyrin, grs. v., in compressed tablet, and generally in the afternoon. Instructions to give if fever rises high, and generally told by headache. One quart sweet milk daily.

Dr. Murray—I am gratified to find that my paper has at least provoked discussion, although it has been rather unfavorable. I am glad that Dr. Carr somewhat takes sides with me on the use of naphthol and also on the antipyretics. I did not mean to state as a fact that the germ theory had been proved correct, but simply wished to draw out the opinions of the members and also to give my experience in using antiseptics.

Dr. T. D. Haigh moved that the paper of Dr. Murray be referred to the Committee on Publication. Carried.

Dr. Julian M. Baker read the following communication from the Academy of Medicine, Raleigh:

Resolution of Respect to Dr. R. B. Haywood.

Resolved, That in the death of Dr. R. B. Haywood the community has sustained the loss of a good citizen, a skilful, faithful and most kind physician, and this Academy an earnest and faithful member. That the members of this Academy deeply deplore the death of Dr. Haywood, and that we, his fellow-members, in the name of the whole profession of the State, tender our sympathy to his family in their distress and offer them our sincere condolence their highest consolation being in his well-spent life, his unblemished reputation and a death where good is rewarded by the Christian's well-founded hope of a blissful immortality.

Dr. Thomas F. Wood moved that this resolution be spread upon the minutes. Carried.

Dr. P. B. Barringer said that, as Dr. Lewis was not present, he thought it would be well to give the time allotted to him for the Annual Essay to the discussion of the Section on Practice.

Dr. Thomas F. Wood—As the Address of the President of the Association is in the nature of a message to this body upon topics which have been considered by him during the past year, and inasmuch as a type-written copy of the Address is in the hands of the presiding officer., I would suggest that that paper be given us to-night, as it contains suggestions upon matters that we ought to be considering during our three day's session.

Dr. J. M. Baker said he had not the annual reports of the Society's Conventions for the years 1866, '67, '68, '70, '73, '74, '83 and '84, and any one having those numbers would confer a favor by forwarding them to him.

The meeting then adjourned until 8 o'clock in the evening.

First Day—Evening Session.

The Society was called to order at 8 o'clock.

The Chairman appointed the following two gentlemen to fill the vacancies on the Board of Censors: Drs. W. L. Crump and George W. Purefoy.

President's Address.

The President's Address, in the absence of the President (Dr. W. T. Ennett), was read by Dr. George W. Long, in the Chair. (See Ap.)

Dr. Thomas F. Wood moved that the usual committee of three be appointed to consider the recommendations in the President's Address. Carried.

The Chairman, Dr. George W. Long, said: I see that the First Vice-President of this Society, Dr. W. J. Jones, of Goldsboro, is on the floor, and I am ready now to turn over the gavel to him. I shall be glad if Dr. Jones will now come forward and take the Chair.

Dr. W. J. Jones on taking the Chair said: Gentlemen of the North Carolina Medical Society, in accepting this emblem of authority, and particularly under the circumstances, I have mingled feelings—those of heart-felt regret that the one to whose care your choice places it by reason of indisposition is not with us to-night—those of pride to wield this potent emblem of authority over the medical intellects of North Carolina; and, gentlemen, in sincere sympathy with our indisposed worthy President and personal individual friend, Dr. Ennett, I do hope that a becoming message of condolence will be sent to him, that he may know the profound regret which his absence causes.

Committee on President's Address.

The Chair announced the following Committee on the President's Address: Drs. George G. Thomas, A. G. Carr, Paul B. Barringer.

Paper on Progress in Microscopy.

Dr. J. M. Hodges, on motion, read his paper on Microscopy.

The Chairman said: We have been entertained in a very gratifying way by Dr. Hodges' masterly paper. It would seem that science has come in and rudely torn the mask from the invisible world and presented to our view many facts we had never dreamed of. There are many gentlemen here who are well versed in microscopy, and we would be glad to have this paper discussed before it is referred to the Committee on Publication. The Society will be glad to hear from Dr. Barringer, who is an expert in microscopy.

Dr. Barringer—In spite of the flattering endorsement of our President and his request to speak on this subject, bacteriology has not fallen into my line, but in view of the considerable interest that has been exhibited this afternoon by the younger members of the Society, I will endeavor to make a few remarks on the subject. A number of them stated that they were startled that men of recognized ability and vast experience like our friends Dr. Foote and Dr. Thomas Moore should doubt at this day the significance and true merits of the germ theory of disease. I will ask them to bear in mind the fact that both of these gentlemen have been practitioners most of their lives in neighborhoods sparsely settled, in rural districts in the main, and that their teachers from whom they acquired these views were men whose medical experience had been derived from cities. Now, as we know it is not the germ *per se* which is the pathogenic disease, but it is the result of the germ. It has never been claimed by the most ardent bacteriologist that bacteria in themselves are the cause of the trouble; it is only claimed that they generate within the body and from poison which is the cause of the disease. We know that there is a close connection between crowded cities and pathogenic generation, because we know that, taking normal atmospheres, whenever the carbon dioxide is increased to 6 or 8 in 100 it becomes dangerous, whereas the same increase of carbon dioxide is absolutely unrecognizable. In other words, the difference between air contaminated by chemical carbon dioxide and that which is caused by respiration is not due to the difference in the carbon, but in the atoms which have been cast off by the respirations of men and by the exhalations of their systems, and we find that in all cities we have bacteria taking a new phase. The same bacteria which in rural districts would not be pathogenic in cities is undoubtedly the cause of septic infection. We find the same germ here, but even the largest towns in our community do not furnish the same conditions for septic infection. Dr. Foote's experience during the war must convince him that it is not the same in crowded hospitals as in the country. It has been demonstrated beyond all cavil, and there is no man who has inquired into the subject that can for one moment doubt that the bacillus of anthrax has been proved to be the cause of anthrax, and if we had condemned criminals upon whom to try this inoculation I have no doubt the germ theory would be put upon a basis utterly beyond question; In conclusion, I may say that the evidence for the germ theory has been limited only by the lack of proper material upon which to experiment.

Dr. Foote—I admit that there is a difference between my practice of to day and my war experience. I admit that my practice is more successful to-day than during the war, but I think it is due to the fact hat I know more about it than I did then, and I have better opportunities and better inssruments than before. But with regard to the germ theory the principle must hold good throughout the whole animal kingdom. I honestly believe that what will affect a human being will affect a horse, a cow or a hog, and I have dressed the wounds of horses many times and never found that any evil result followed because they had not been treated in a proper antiseptic manner.

Dr. L. G. Broughton—I have had no experience with the microscope. I can only cay, as a young man without experience, that I endorse every word in Dr. Hodges' paper, and that if we have anything in the future to look to as doctors of medicine it is to the microscope.

Dr. P. B. Barringer moved that Dr. Hodges' paper be referred to the Committee on Publication. Carried.

Dr. Foote—I would like to report a case that I think will be interesting to the Society. I have a little boy that will be five years old next spring. Last summer he was taken sick with a slight diarrhœa. The little fellow continued to run about the house, but had no appetite. In three or four days I discovered that he had fever and his actions became very frequent and he had to take to his bed. I gave the ordinary diarrhœa prescription, but he grew worse. I found his temperature to be 98½°, pulse 88. His actions became more frequent, and one day they reached fifty in number. A consultation with my professional friends, who kindly offered me every assistance, brought me relief to the sufferer. He had complete anorexia, amounting to disgust for food, and there was no thirst. After a trial of all the usual remedies I obtained relief by the hyperdermatic use of morphia and atropia in very minute doses. In reply to Dr. Burbank, Dr. Foote said all the temperatures were taken in the mouth or axilla. Dr. Graham suggested that the case was ulceration of the rectum. Dr. Faison had seen a similar case in a clinic, which speculum examination proved to be an extensively ulcerated rectum—promptly recovering under the use of caustics.

Paper on Pneumonia.

Dr. Carr read the clinical report of a case of pneumonia, which, on motion, was referred to the Committee on Publication.

Dr. Burbage Invited to a Seat.

On motion of Dr. Picöt, Dr. Burbage, of the Virginia Medical Society, was invited to take a seat and participate in the discussions

Report of Committee on Credentials.

The Committee on Credentials reported the following gentlemen for admission into the Society: Drs. J. T. J. Battle, Wadesboro; Julian E. Wood, Elizabeth City; W. W. Griggs, Elizabeth City; R. M. Cartwright, Elizabeth City; E. B. Ferrebee, Belcross, Camden county; Isaac Jackson, Whiteville; Oscar McMullin, Elizabeth City; W. H. Hardison, Cresswell. Also Drs. Thomas J. Moore and A. C. Palmer, delegates from the Virginia Medical Society, and Dr. Joseph Graham, delegate for the Charlotte Academy of Medicine.

Committee on Finance.

The Committee on Finance was announced, consisting of Drs T. D. Haigh, L. G. Broughton, Julian E. Wood.

On motion the Society adjourned to meet Wednesday morning at 9 : 30 o'clock.

ELIZABETH CITY, N. C., April 17, 1889.

SECOND DAY—MORNING SESSION.

The meeting was called to order at 9 : 30.

Report of the Financial Committee.

Dr. Haigh read the report of the Financial Committee, which was adopted, as follows :

Having examined the Treasurer's accounts and vouchers, they find them correct.

The amount of cash on hand May 8, 1888	$448.42
Amount collected from members May 8, 9, 10	697.00
" " " " 8, 9, 13	218.50
Total	$1,358.92
Expenditures as per vouchers	593.32
Balance on hand	$765.60

The Committee recommend an assessment of $2.00 for the ensuing year, and that the salaries of Treasurer and Secretary be the same as last year.

Your Committee feel that the thanks of the Society are due to the Treasurer for the thorough manner in which he has discharged the duties of his office, as they have been unusually onerous.

(Signed) T. D. HAIGH,
L. G. BROUGHTON.
J. E. WOOD.

STEAMERS SYLVAN GROVE and PASSPORT.

CAROLINA BEACH!

SURF BATHING!

This is especially a family excursion place, a resort for ladies and children, and for those who like quiet enjoyment.

Its location is about six miles from Fort Fisher, two miles from the Cape Fear River, and about the site of old Camp Wyatt.

It was at this point that the United States troops were landed when Fort Fisher was captured.

The elegant side-wheel Steamer

"SYLVAN GROVE,"

makes trips to the Beach, leaving Wilmington daily, except Sundays, about 9 A. M. and 2 P. M.

FROM WILMINGTON TO THE BEACH WILL TAKE LESS THAN ONE HOUR.

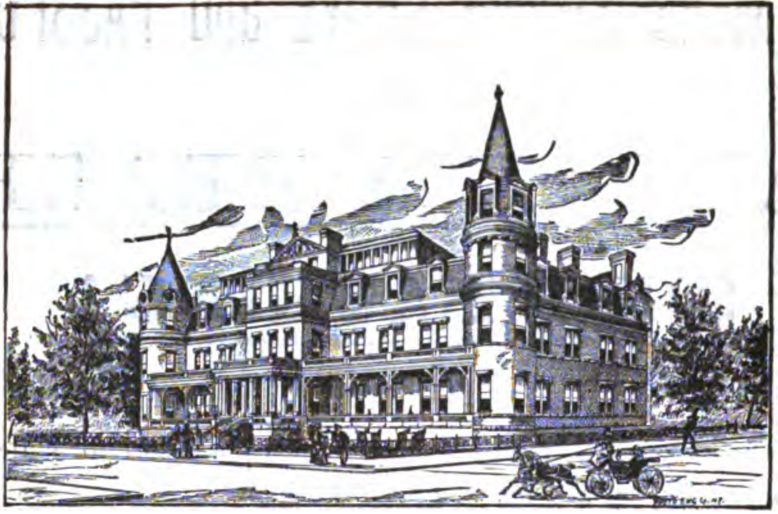
Passengers transfer from the Sylvan Grove to the train on the wharf and the train puts them on the Seashore.

The Railroad has been changed since last season and relaid with **STEEL RAILS, NEW LOCOMOTIVE and ROLLING STOCK.**

Everything will be done by the management to make the stay of visitors pleasant.

For board at Hotel address B. L. PERRY. For Excursions, &c., address,

NEW HANOVER TRANSIT CO.,
Wilmington, N. C.



Dr. William A. Hammond's Sanitarium

—FOR—

DISEASES OF THE NERVOUS SYSTEM,

WASHINGTON, D. C.

Dr. William A. Hammond announces to the medical profession that he has returned from New York to Washington, D. C., where he has established, in a building especially erected for the purpose, a *Sanitarium* for the treatment of mild and curable cases of mental derangement, diseases of the nervous system generally, cases of the morphia and chloral habits, and such other affections as may properly be treated by the remedial agencies under his control. His experience during many years has convinced him that most diseases embraced within the above-named classes can be managed much more successfully in an institution of this kind, under the constant supervision of the physician and with the aid of means not otherwise at command, than when the patients are seen by their medical advisers at intervals of several hours or days.

The *Sanitarium*, which has been constructed under the superintendence of A. B. Mullett. Esq., late architect of the United States Treasury department, and is situated on Columbia Heights, at the corner of Fourteenth Street and Sheridan Avenue. The position is the highest in the immediate vicinity of Washington, the soil is dry, and all the surroundings are free from noxious influences. It is readily reached by the Fourteenth Street Railway, the cars of which run to the doors. The building is very large, and as perfect in structure and arrangements as is possible from a knowledge of sanitary science and of the requirements of such an institution. It accommodates about thirty patients. So far as the rooms, table, etc., are concerned, they are equal to such as as exist in the best hotels of our large cities. Electricity in all its forms, baths, douches, massage, inhalations, nursing, etc., are provided as may be required by patients, in addition to such other medical treatment as may be deemed advisable.

A large *Solarium* for sun-baths and exercise in cold or inclement weather and heated with steam in winter is constructed on the top of the main building.

Each patient is thoroughly examined by Dr. Hammond and receives his daily personal attention, while Dr. E. L. Tompkins, a physician of ample hospital experience and of tried executive ability, resides in the institution, and has, under Dr. Hammond, the immediate superintendence.

The *Sanitarium* is now open for the reception of patients.

For further information Dr. Hammond can be addressed at The Sanitarium, Fourteenth Street and Sheridan Avenue, Washington, D. C.

Report of the Pharmaceutical Society.

Dr. J. M. Baker read a report from the Pharmaceutical Society, as follows:

To the Medical Society of the State of North Carolina, in its 36th Annual Session, at Elizabeth City:

This is to certify that Mr. F. W. Hancock, of New Berne, and Dr. William Cobb Whitfield, of Statesville, were duly appointed a Committee from this Association to submit to your Society the National Formulaay for consideration, and adoption of its formulæ as authority for all preparations contained therein.

This Committee has been appointed in pursuance of the following resolution passed by the American Pharmaceutical Association at its meeting held in Detroit, September 5th, 1888:

Resolved, That the Secretary of the American Pharmaceutical Association be requested to send notice to the different State Pharmaceutical Associations, requesting them to appoint a committee to the annual meeting of their State Medical Associations, for the purpose of submitting the National Formulary for their consideration and adoption as authority for all officinal preparations contained in the same.

A copy of the work in question was mailed in July last to every State Medical Association, addressed to the Secretary. In its preface will be found a short historical account of its origin and expected field of usefulness. E. V. ZOELLER, Secretary.

Dr. Thomas F. Wood—This formulary is known as the National Formulary and contains all the preparations which were excluded from the Pharmacopœia of the United States of 1880, and includes a large number of formulæ which are in use by physicians lately. It is well known that in the revision of the Pharmacopœia of the United States it was impossible to include all of the preparations in use, and many of these unofficial preparations have been called for by physicians in different parts of the country. I think that in the city of Brooklyn they had a formulary of private prescriptions and preparations of various sorts that were popular in that neighborhood, and at Philadelphia they had a formulary of the same sort which included many popular preparations, and these two decided to present to the general public what they had collected, and it was adopted by the American Pharmaceutical Association.

As I understand it, what they ask this Society to do now is to endorse and accept this National Formulary as official. There are several points to be considered in connection with this. At first I was afraid, and some other members were afraid, that it would forestall the Pharmacopœia of 1880, and was therefore an unfair advantage that had been taken by the pharmacists, but upon a more thorough examination of the volume it was discovered that it contained formulæ that were of great importance to the profession—some that could not be found in the dispensatories and some that had not found their way into any book of collected formulæ. So it seems to me that whilst we are not exactly in a position to give official sanction to this volume, it would be well for us to take a position a little less imperative than that, and, after examining this National Formulury, to see whether or not we can accept it. I know this, that the National Formulary has been in my hands about six or twelve months, and there is no book in my office that I have consulted with more convenience for current prescriptions and current preparations than this volume. This National Formulary lightens the burden upon druggists inasmuch as it forms a standard, and therefore they are interested in it. It seems to me that it will be well to appoint a committee to inquire into this book during the session of this Association, and see whether or not we can adopt it. If we can adopt it I am satisfied that it will relieve the smaller druggists in our State of much expense, and it will furnish the physicians with a number of formulæ that cannot be excelled, and we shall also have a uniform standard of preparations.

Dr. P. B. Barringer moved that this motion be referred to committee for consideration.

Dr. Carr moved the reconsideration of the motion by which A. V. McCanless joined the Association yesterday, which was carried.

Committee on Formulary.

The following Committee was appointed by the Chair to consider the adoption of the National Formulary: Drs. J. T. Nicholson, J. A. Hodges and James M. Dunlap.

Report of Section of Obstetrics.

The President read Dr. Tayloe's report of Section of Obstetrics.

Dr. Tayloe not being present, Dr. O'Hagan moved that it be referred to the Committee on Publication. Carried.

Dr. Carr introduced the case of his little son, who was suffering with a singular eruption on the back of the hands, the nose, ears, etc.

Dr. J. C. O'Hagan described a skin disease which invaded Pitt county, which resembled the itch (scabies), but it could not be proved to be scabies by the microscope, etc. He failed to cure it with the ordinary remedies for eczema. It extended widely and attacked almost every family, but he was not prepared to say that it was contagious. He diagnosed the case of Dr. Carr's son as eczema, demanding local and constitutional treatment.

Dr. Carr said several physicians in New York had diagnosed it as pemphigus, impetigo, eczema, and that Dr. Fox called it contagious impetigo.

Dr. W. C. Galloway read a communication from Dr. Reid, of Williamston, who desired to become a member of the Society. Dr. Galloway said he knew Dr. Reid personally, who was a most excellent gentleman and a worthy physician.

Dr. T. D. Haigh moved that it be referred to the Committee on Credentials.

Dr. Baxter Invited to a Seat.

Dr. Baxter was introduced to the Society by Dr. Hodges and invited to take a seat and participate in the discussions.

Fraternal Greetings to the Mississippi Medical Society.

Dr. S. T. Nicholson moved that the Medical Society of North Carolina tender fraternal greetings to the Mississippi Medical Society, now in session at Jackson, Mississippi.

The motion was adopted, and the Secretary was directed to carry it out.

Application for Admission

Dr. J. C. O'Hagan—A personal friend of mine in Halifax county desires to connect himself with this Society. There are some obstacles in the way from the fact that he had not quite completed his medical education before the war, in which he participated, but not in a professional capacity. Since the war he has been forced into the practice of medicine in the section of Halifax and Warren, in which he lives. He has a natural aptitude for medicine and discharges his duty to the satisfaction of his patients. It is impossible for him to be present here. I think, were he present and the conditions connected with his application made more fully known to the Society, he would, after referring his case to the Board of Examiners, be readily admitted. As a gentleman, I can endorse him in a thorough manner; as to his professional attainments, he lives so far away that I cannot speak, but gentlemen who live closer can perhaps give you more information on that point than I can. I admit that the mode of application does not meet wit.. favor from me, and I think the rule which was adopted and which was afterwards repealed, that all applications should be made in person, should be revived. If the honor of belonging to the Medical Society of North Carolina be worth anything, it is certainly worth coming in person to ask for. I will now read you the application of Dr. Edward Thorne, of Halifax, and you can take what action you think best.

Dr. O'Hagan then read the letter of Dr. Thorne.

Dr. Thomas F. Wood moved that it be referred to the Committee on Credentials, which was carried.

Report of the Committee on the President's Message.

Dr. George G. Thomas read the report of the Committee appointed to consider the suggestions in the President's Address, as follows:

Mr. President and Gentlemen of the Society:

Your Committee appointed to consider the suggestions made in the message of the President and report on them for your action, deem it not inconsistent with the duty assigned them to express for themselves and again for this Society the regret that is felt at the absence of our honored friend. Assured as he was of the hearty good will of this body, enthused with a desire to make his administration a justified return for the pleasure which his elevation to the place of presiding officer, where our choice last year had placed him, earnest and honest in his purpose to fill his position with credit to himself and for the benefit of this organization, it is with sorrow and sympathy that we know that sickness of such a serious nature should have overtaken him at the very outset of his executive career.

We earnestly commend the suggestion of the President that this

Society shall continue its recorded opposition to the establishment of medical colleges in this State until such time as they can begin this course with a sufficient endowment to set all chance of failure out of the question. The standard of proficiency which has been established and maintained by the Board of Examiners demands that the candidates for their license shall be well educated, and the very spirit of their work demands that all of the medical colleges which our young men may attend shall be equipped with laboratories of the best character, and the studies of the pupils directed by men of learning and character. It is needless to discuss this suggestion at length, for its worth is thoroughly apparent.

The Committee to whom were given the revision and amendment of the medical laws of the State will make a report at the session, and the commendation for their work will prepare the way for their report.

The suggestion that a committee be appointed by this Society to represent it at the meeting to be held in the month of May, 1890, to revise the Pharmacopœia will most assuredly meet your approval. This is one of the most important works that is undertaken by the profession of the country, and it is our duty to be represented in this coming Convention by a delegation of three of our members.

The law that was passed at Charlotte making it possible for a physician to join the Society by a written application, endorsed by two members of the Society in good standing—the applicant himself not being present when the application is submitted, is not in accordance with the spirit of our laws, and has not realized the hopes of the author of the law, and we agree with the message of the President that it should be repealed. There is no good reason why a physician who desires to become a member of the Society and enjoy its privileges should not be willing to come to its meetings and enter its lists in the usual and well-approved method.

The practice of allowing reports from sections to be submitted to this Society by proxy is not a reasonable permission to be granted by this body, as it is supposed to be a part, and no inconsiderable part, of the author's duties that he shall be present when his report is made to defend his report, if assailed, as well as to show by his attendance at the meeting his appreciation of the compliment which he received by the appointment to his important place. Of course this cannot apply when the author is detained by circumstances that are beyond his control.

In conclusion, we are pleased to commend this message, as a whole, as worthy of your consideration and as an attest of the wisdom of the choice which has made author our presiding officer.

On the motion to adopt the report, Dr. T. D. Haigh said: I should like to know if the adoption of that report carries with it the adoption of the suggestions in the report.

Dr. George G. Thomas explained that the Committee only meant that the suggestions were favorably received, and it left it to the Society to take action upon them.

Dr. George W. Long—I think that the Committee should decide whether these suggestions are to be adopted or not, otherwise the Society will have its hands full of unfinished business.

Dr. George G. Thomas—I think Dr. Long has misconceived the duties of this Committee, but, to bring the matter to a head, I move that so much of the By-Laws as allow a physician to become a member of the Society by a written application, not being present himself, be repealed, which was carried unanimously.

Paper on Midwifery.

Dr. L. G. Broughton read a paper on Aseptic and Antiseptic Midwifery. Referred to the Committee on Publication.

Report of the Committee on Surgery.

Dr. Faison desired to read the report of the Committee on Surgery in the absence of Dr. Lucas, the Chairman.

Dr. George G. Thomas called the attention of the President to the fact that the Committee on the President's Address had decided that papers should not be read unless the authors were present.

Dr. Thomas F. Wood thought it would be rather a hardship if Dr. Lucas' paper were not read.

Dr. J. M. Hays moved that the paper be referred to the Committee on Publication. Carried.

Report of the Obituary Committee.

Dr. J. M. Baker said he had a report from Dr. Satchwell, Chairman of the Obituary Committee, which he moved be referred to the Committee on Publication. Carried.

Report on Practice of Medicine.

Dr. Murray said he had the report of Dr. M. P. Bodie on the Practice of Medicine, which he moved be referred to the Committee on Publication. Carried.

Report of Case of Spontaneous Thrombosis of Pulmonary Artery.

Dr. Faison read the report of a case of Spontaneous Thrombosis of the Pulmonary Artery following labor, with recovery.

Dr. George W. Long moved that the valuable paper read by Dr. Faison be referred to the Committee on Publication. Carried.

Paper of Dr. Palmer on the Ear.

Dr. J. M. Baker said that Dr. Palmer, of Norfolk, had a paper on the Ear and he moved that he be invited to read it.

Dr. Palmer, on the invitation of the Society, came forward and read his paper.

Dr. J. M. Hays moved that the thanks of the Society be tendered Dr. Palmer for his interesting paper, and that it be referred to the Committee on Publication. Carried.

Detention of the Orator.

Dr. J. M. Baker read a telegram from the orator of the evening, Dr. R. L. Payne, Jr., saying he was at Norfolk and would come on. The railroad agent, however, had stated that there would be no trains from Norfolk to-day.

Place of Next Meeting.

Dr. L. G. Broughton—I would like to make a few remarks just now as to the place where this Society shall hold their next meeting in order that the members may think the matter over before the the subject comes up for decision. The physicians in Reidsville instructed me to request the Society to meet there next year. We have a town of at least 5,000 inhabitants, we have hotel capacity for 500 guests and we have as hospitable people as there are in the State of North Carolina. We have entertained the Baptist State Convention, the Presbyterian Synod and the Methodist Conference, and we are anxious to entertain this Society next year. The plan of the Society has been to move about in different sections of the State in order that we might increase our membership, and while I detest that policy, believing that if a physician properly appreciates the honor of belonging to this Society he will take the trouble of attending the meetings of the Society in whatever part of the State it is held; still, since that is our policy, we are entitled to the Society from that fact, if for no other, than any other part of the State. We have a large county and only two members of this Society live in that county. We have never had the Society in our place. We are easy of access, and I am satisfied the Society would find a very cordial welcome there. I understand that Dr. Wood claims it for Wilmington, but I think we have met enough in the East, so let us meet for once in the West.

Dr. J. A. Reagan invited the Society to meet in Asheville. He said they had a population of 10,000, a hotel capacity for 1,500, and would give the Society every comfort. They had only had the Society once in Asheville. He had come 600 miles to attend this meeting and thought they deserved to have the Society in the West next year.

Dr. P. B. Barringer—While I would do nothing to dampen the ardor of the gentleman who has proved his devotion to the Society by coming 600 miles to attend its meetings, I would suggest that the decision of the place for next year's meeting is not in order, and that we proceed with the regular business.

Dr. J. C. O'Hagan—I think that as the Society has no business before it at present, we should now decide the meeting place for next year. I am in favor of going to Reidsville.

Dr. J. M. Hays extended an invitation to the Society to meet in Oxford.

Dr. Foote said so far as he was personally concerned he was willing to go anywhere, but there were a great many things to be considered in the location. The Society had been travelling from East to West all the time, which was unfair to the Middle men, as it gave them all the travelling, and he would vote for Oxford, which was a central situation.

Dr. Graham moved that the Society meet in Reidsville, as he thought it was desirable that they should make the acquaintance of country.

Dr. Thomas F. Wood moved an amendment that the Society go to Wilmington. The only reason that the Society went from place to place was that the young men should have better facilities for joining. It is true that the Society had met this year in the Eastern part of the State, but it was the extreme Northeastern part and a long way from the Southeastern.

Dr. George G. Thomas—I do not think it is necessary for me to say anything more in favor of Wilmington. There are railroads running into Wilmington which will give ample access from all parts of the State without fear of floods. We have ample accommodation, and we will give you all a hearty welcome and as much amusement as you are willing to take. We have been looking forward to the Society meeting in Wilmington next year, and we hope you will not disappoint us.

Dr. P. B. Barringer made his previous motion, that the matter was not germane, and that it be put off until the last day of the meeting. There were quite a number of members in Norfolk who had been unable to get through on account of the storm, but who would probably be present to-morrow, and it was only fair that they should be allowed a voice in the matter.

The Society Invited on an Excursion.

Dr. J. M. Baker said that Dr. Lumsden had requested him to state that it was intended to give an excursion down the Sound to the fisheries, and he desired all members who wished to attend to give in their names.

The Discussion on Place of Meeting Continued.

The discussion as to the place of meeting was continued with great animation and without any prospect of a settlement being effected, when Dr. Graham moved the adjournment of the meeting until 2 : 30 o'clock, which was carried.

SECOND DAY—AFTERNOON SESSION.

The Society was called to order at 2 : 30 P. M.

Paper on Inebriety.

Dr. T. D. Haigh read a paper on *Inebriety.* (See Appendix.)

Dr. J. W. Jones said: I have thought so much about this subject that at one time I went so far as to make arrangements for a building for inebriates. I corresponded with some big-hearted men in this State with the object of making some provision for this unfortunate class, for which we need an asylum just as much as for the insane, but I found that at this period of my life I was unable to go through the work that would be necessary, and I make these remarks in the hope that somebody else may take up this good work.

Dr. Thomas F. Wood—Dr. Haigh has given us some valuable thoughts on the subject. I know that many of us have anxiously considered the matter, and many of us have been put to straits at times when our hearts have been torn by the condition of some near friend who needed just such restraint as mentioned, and there being no such place in North Carolina. Many of our friends who could afford it have sent these inebriates away into distant States for treatment at an expense which has almost impoverished them. Some of the theories announced by Dr. Haigh I am not exactly in accord with. I do not think it would be safe to take the position that every inebriate is a diseased man except in the sense that he is morally diseased, inasmuch as drunkenness is a breach of the moral law. I am inclined to take that view of it, but whatever position we take it, all leads us back to the original proposition, What shall we do with these poor people? Some of the most brilliant men in the State have been driven to degradation and ruin by drink because there have been no adequate means of restraining them. All that can be done at present is to put an inebriate under guard, but soon he becomes tiresome and a nuisance to his keepers, and so many of these poor men go from one state to another until their recovery is impossible. I fully agree with Dr. Jones that the time has come in the State when, if we had such an asylum we could lessen the pressure on our insane asylums.

Dr. George G. Thomas—There is another consideration in reference to this subject. If I understand it aright the difference between an habitual drunkard and a dipsomaniac is this: the dipsomaniac struggles hard against his inclination to drink when the fit comes on him, and in his periods of freedom he has a feeling of repugnance to liquor. The common drunkard is a man who is probably diseased, but his disease is of a different character. Of the two men I think the dipsomaniac is the least amenable to treatment, but all the more needs isolation The common drunkard, I believe, could be treated more thoroughly by the law in some stronger form, because in him it is the indulgence of a depraved appetite. In the other one it is an appetite which you may call depraved, but which he cannot resist, and I do not think it would be fair for the State to class all these men as inebriates and treat them all alike. I think there is a wide difference between the two classes. The dipsomaniac is really an insane person with lucid intervals; the other is a man who wilfully indulges a depraved taste.

Dr. C. J. O'Hagan—This is an important question, and I think Dr. Thomas has made a very proper distinction. The dipsomaniac is often a man of brilliant intellect, while the drunkard is a very common fellow, who seeks relief from care in drink. Dr. Haigh draws a very sad picture, but if you will look back thirty or forty years you will find, I think, that the drinking habit has actually decreased. The increase of knowledge has shown us the harmfulness of the habit, and public opinion has grown so that a drunkard is put outside the pale of respectability. We have to confess this, however, that there is an instinct in human nature, from the very lowest savage up to the most cultivated man, an inborn inclination for stimulants of some sort. The South Sea Islander gets a girl to chew his kava kava and spit it out into a vessel in order that he may drink the intoxicating mixture. Even the negroes in Central Africa make a kind of beer from fermented corn. The Chinaman has his tea and his opium. The Hindostani will drink his arrack, which is meaner than the meanest whiskey. And we find that every people, both civilized and uncivilized, have their stimulating drinks. The ancient Greeks made splendid wines, and their noblest poets were not ashamed to sing in eloquent strains the virtues of the Falernian wine. The love of stimulants is an instinct in human nature. You may lecture the world, you may read the most convincing articles that the abuse of these drinks is fraught with the greatest danger to the race as well as to the individual, that the sins of the father are visited upon his children to the remotest generation, but still the desire for stimulants is there, and, in my opinion, will always exist. Dr. Haigh's opinion, however, I consider a very timely one; it is well written and full of wise suggestions, and I request that it be published in the "Transactions."

Dr. T. D. Haigh—We must not confound the simple drinking and the occasional getting drunk with inebriates, but, as I stated, the line of demarcation is a very difficult one to define, and I would include them all in that line, and would place them all under restraint to keep them from becoming diseased, if they are not already so. That was my line of argument. It is true, as Dr. O'Hagan says, that people all over the world, even the savages, have their stimulants, and the lower down we go into the order of beings, the more they use these stimulants to excess. But in a country like ours, where civilization has risen to such a height, it is time, it seems to me, that we as a profession should be leaders to a higher frame of thought and bring into active use all the means that we have for the prevention of the excessive use of alcoholic drinks.

On motion, Dr. Haigh's paper was referred to the Committee on Publication.

Pharmacopœia Committee.

Dr. George G. Thomas—I would like to make a motion that a committee of three be appointed from this Society to attend the Convention to meet in Washington in 1890 for the revision of the National Pharmacopœia, and that this Society pay the expenses of such committee. The necessity of this is apparent. The Pharmacopœia is already in such a state of completion as to commend itself to the good will of all the profession. It is a work that cannot be dispensed with, and its revision and the amendments to be added can only be done by men skilled in the work. It is only right that this Society should be represented. This motion was carried.

CONJOINT SESSION WITH THE NORTH CAROLINA BOARD OF HEALTH.

The Medical Society of North Carolina and the State Board of Health went into conjoint session.

Dr. J. W. Jones, President of the Board of Health, presided.

Owing to the disastrous storm which washed out the railroads leading into Elizabeth City, only two members of the Board succeeded in reaching the place of meeting before the interruption of travel. Present, Dr. J. W. Jones, President of the Board of Health, and Dr. Thomas F. Wood, Secretary. The conjoint meeting was called to order at 3½ o'clock, Dr. Jones, President of the Board, in the Chair.

The Secretary of the Board recited the work which had been carried on during the last year, as set forth in the second Biennial Report published by the General Assembly. Owing to delays of transportation the reports which had been forwarded from the Secretary's office had not been received for distribution.

The most important matter now before the Board was the preparation against an expected recurrence of yellow fever in Florida.

Two members of the Board, Mr. J. L. Ludlow and the Secretary, attended the Quarantine Conference at Montgomery, Alabama, in March. The meeting was an exceedingly practical one. The question formulated for consideration was, "What would we do?" in such and such a case, showing decided impatience with theories.

We believe that firm adherence to, and a prompt execution of, the propositions agreed to, will be the working basis of the management of epidemics for the coming season. The determination to *report promptly the first cases of yellow fever*, so that each Board of Health in the country would be apprised of the earliest danger, was made a prominent feature, and if adhered to, as I believe it will be, we may expect to be able to allay panic, which was so harmful to business last fall.

The State Board have determined to keep in operation the resolution of last year, viz: not to allow the colonization of refugees from towns infected with yellow fever, until arrangements could be made to maintain a strict quarantine guard during the period of detention.

Necessary preparations are being made to maintain a station of observation on the west side of the Cape Fear river should yellow fever show itself in the South, and the railroad authorities of the Atlantic Coast Line have given every assurance of hearty coöperation. With the small means at the command of the Board no quarantine worth mentioning could be kept up but with the assistance of the railroad authorities, and they have made the inland quarantine a common cause with the Board, thereby assuring the least detention to travel and as little discomfort as possible.

I report, with regret, that the last General Assembly refused to appropriate $5,000 asked to make the Cape Fear river quarantine effective. This throws a great burden upon the Quarantine Board, and puts a large burden upon commerce in the way of delays and extra expenses in loading at a distance of twenty-five miles from Wilmington. With the small concessions made by the General Assembly of fees and the sale of a small tract of land, the Board will have to struggle to maintain an acceptable maritime quarantine.

Such parsimonious treatment of the public interests is but one of a long list of barren legislative action which keeps our State behind in the race of progress.

The Secretary suggested that, in order to determine the present status of County Boards of Health and ascertain their difficulties, that he would call upon each county to hear verbal reports.

The Conference assumed a conversational enquiry. The facts elicited are about as follows:

1. In counties where there are towns of a considerable size the interest in sanitary matters is greatest and is increasing.

2. In towns and counties where the medical profession is in harmony, much influence has been used to establish sanitary work. Where the medical profession was divided no interest was manifested, and this is necessarily so, because sanitary work is a cause involving not only only the entire medical profession, but the people at large, and the work of one man or two could be little felt.

3. No efforts had been made to draw the people out in sanitary meetings in the majority of counties, but it was evident that the people were awaking to the necessity of concerted action in matters appertaining to the public health.

4. Raleigh, Wilmington and Fayetteville had put forth earnest efforts to secure more accurate vital statistics, and there was no difficulty in getting active coöperation between the profession and the county authorities.

5. One of the towns reporting had been sending utterly unreliable statistics, and as a rule all had been over-estimating the population·

6. Most of the counties represented were impressed with the necessity of having a County Board of Health, and promises were made of renewed efforts to establish them.

The election of two members of the Board of Health for six years, to succeed the members whose office had expired, was postponed until to-morrow afternoon.

There being no further business, the conjoint session adjourned at 5 o'clock.

The Medical Society Resumes its Session.

The Medical Society was then called to order again by the Chair.

Dr. J. M. Hays read a paper on

Deafness, Its Causes and Prevention from a Rational Standpoint.

Dr. Young—I beg to return my thanks to Dr. Hays for his paper, and move that the thanks of the Society be tendered to him, and that it be referred to the Committee on Publication. Carried. (See Appendix.)

The Excursion Declined Because of Pressure of Business.

Dr. Foote—There is to be an election of officers and the appointment of many committees, and it is also proposed to give us an excursion to-morrow from which we will not return until sometime in the afternoon, and I therefore propose that we meet early this evening and sit until the business is finished.

Dr. Thomas F. Wood—If we go on the excursion we shall have to neglect business.

Dr. J. M. Hays—I move that the thanks of this Society be returned to the Committee of Local Arrangements for the kind invitation, with regret that we are unable to accept it. Carried.

Invited to a Concert and to the Cotton Factory.

The President—The ladies of the city have arranged to give a concert to-night for the benefit of the Presbyterian church, and have cordially invited the Society to attend. Also, the Superintendent of the Cotton Factory extended an invitation to the Society to give him a call before leaving.

Appointment of Committees.

The President appointed the following committees:

Committee for Revision of Pharmacopœia—Drs. Thomas F. Wood, J. M. Baker and R. S. Young.

Committee on Selection of Essayist—Drs. Carr, White and Hodges.

The meeting then adjourned until 7 : 30 P. M.

SECOND DAY—EVENING SESSION.

The meeting was called to order at 7 : 45 o'clock.

Dr. Lucas' Paper Read.

Dr. S. T. Nicholson—The Society decided this morning that Dr.

Lucas' paper should not be read in his absence, which I think was unprecedented. I now move that it be reconsidered, and that Dr. Faison be permitted to read it. Carried.

Dr. Faison then read Dr. Lucas' paper, being the report of the Chairman on the Section of Surgery. Referred to the Committee on Publication.

Committee on Nominations.

The President announced as the Committee on Nominations, Drs. Barringer, W. H. Whitehead, S. T. Nicholson, Foote and Picöt.

Appointment of Essayist for the Next Meeting.

The Committee appointed to select the Essayist for the next meeting selected Dr. I. Wellington Faison.

Report of Section on Anatomy and Physiology.

Dr. Paul B. Barringer read the report of the Section on Anatomy and Physiology.

Dr. J. M. Hays moved that Professor Barringer's paper be referred to the Committee on Publication. Carried.

Prize of D. Appleton & Co.

Dr. J. M. Hays explained that the prize offered by D. Appleton & Co. of $25 to the candidate who passed the best examination was a standing prize. There seemed to be an idea that it only applied to last year.

Dr. Carr Tenders His Resignation.

Dr. Carr tendered his resignation to the Society.

Dr. Picöt moved that it lie over until to-morrow. Carried.

Dr. Baker Tenders His Resignation as Secretary.

Dr. J. M. Baker tendered his resignation as Secretary to the Society.

On the motion being put the Society refused to accept it.

Dr. Baker explained that he really desired to resign, as he could no longer afford the time necessary for the discharge of the duties.

Dr. Picöt moved that Dr. Baker's resignation be accepted and that the Society thank him for his long services. Carried.

Report of Section on Medical Jurisprudence.

Dr. J. T. Nicholson, Chairman of the Section on Medical Jurisprudence, read a paper on *Dipsomania.*

Dr. George W. Long moved that it be referred to the Committee on Publication. Carried.

Dr. McNeill Detained at Home.

Dr. T. D. Haigh explained that Dr. McNeill, who was appointed to present a subject for discussion this afternoon, found it utterly impossible to attend from the fact that he had been summoned as a witness in court.

The Place of Meeting Settled.

Dr. J. M. Hays moved that the place for the next meeting be now settled. Carried, when an animated discussion ensued, in the course of which invitations were extended from Reidsville, Asheville, Oxford, Wilmington and Statesville, each of these places finding many warm advocates. At length a ballot was called for by Dr. L. G. Broughton, and Oxford was found to be the choice of the majority, which, on motion of Dr. Foote, was made unanimous.

The Case of Dr. Gallagher.

The Board of Censors reported that, upon examination, the charge of false registration was not sustained. This case was brought from last year to allow Dr. Gallagher to explain.

Dr. Thomas F. Wood—The report of the Board of Censors just made only exculpates Dr. Gallagher from the charge of false registration, but does not decide his status in the Society.

Dr. Hodges explained that that was the only question before the Board.

Dr. Baker moved that Dr. Gallagher be allowed to amend his entry on the register. Carried.

Report of Section on Therapeutics.

Dr. Young—As Chairman of the Section on Therapeutics, I would like to have my paper referred to the Commitee on Publication without reading, as it is now 10 o'clock, and it would take nearly an hour to read it.

Dr. J. M. Baker moved that Dr. Young's paper be referred to the Committee on Publication. Carried.

Report of Committee on Credentials.

The Committee on Credentials reported favorably the names of Dr. B. F. Dixon, of Oxford, and Dr. Albert Anderson, of Wilson. Report adopted.

The meeting then adjourned until 9 : 30 the next morning.

ELIZABETH CITY, N. C., April 18, 1889.

THIRD DAY—MORNING SESSION.

The meeting was called to order at 9 o'clock.

Temporary Committee on Credentials.

Dr. T. D. Haigh moved that the following named gentlemen be appointed as a Temporary Committee on Credentials so long as the Board of Examiners was in session, to receive applicants who had obtained licenses, and that the register be with them : Drs. W. J. Lumsden, O. McMullen and W. W. Griggs. Carried.

Invited to a Banquet.

Dr. Griggs—In the name of the physicians of Elizabeth City, I cordially invite you all to remain over until to-night. The citizens have prepared a banquet for you, and we shall be extremely sorry if you are not able to stay.

Report of Committee to Amend the Laws.

Dr. George G. Thomas read the report of the Committee appointed to look into and amend the laws affecting the practice of medicine in the State. The report is as follows :

Mr. President and Members of the Society:

We, your Committee to whom were given discretionary powers to revise the already existing laws relating to the practice of medicine, and to present such amendments as seemed necessary to the Legislature for its action, beg leave to say that they have approached this work with a full appreciation of its responsible character, and have given to it our best efforts to make the statutes as effective as possible without endangering the laws or exciting such opposition to them as might effect their repeal. Able legal counsel was employed to draft the amendments that we have secured, and no step has been taken without proper direction being given to it by our adviser. It is worthy of record that, after a patient and honest statement of the need for these amendments, we found active friends in the members of the Legislature, and the act passed promptly through both houses without a dissenting vote.

The feeling of satisfaction that stirs every member of this Society in the contemplation of the fact that this body is the author and protector of the medical laws of the State, that it was the pioneer in this great movement towards the elevation of the mental and moral character of the profession, and that to the fostering care which it has given the work of the Board of Examiners is due the reputation we are gaining as a united and intelligent profession. These all were alike sources of satisfying pride to your Committee and imperative incentives to urge us to make every effort to obey, as wisely as we could, the behests of this Society.

It is the duty of this Society now to carry on the work so well begun, and so far advanced, by guarding so scrupulously the composition of the Boards of Examiners, that the standard and character they have attained may not suffer any change, and that their work shall still protect the citizens of the Commonwealth from the danger of allowing incompetent persons to practice medicine and surgery. The general tenor of the amendments will explain themselves to all persons who are familiar with the laws as they previously stood on the statute books.

The following seem to be points of new laws stated briefly : All physicians holding diplomas dated prior to the 7th day of March, 1885, may practice in North Carolina and collect by law fees for their services, provided they have received a certificate of registration. This latter clause is further fortified by requiring that all applicants for registration shall be licentiates of the Board of Examiners or exhibit a diploma dated prior to the 7th day of Macrh, 1885, or make oath that they were in active practice in North Carolina before the above-mentioned date. To practice medicine or surgery without registration, after the 1st day of January, 1890, will make the persons attempting it guilty of a misdemeanor, for which suitable punishment is provided. No physician can come into North Carolina and begin his professional work after the 1st day of January, 1890, without a license from the Board of Examiners, no matter what the date of his diploma may be.

Physicians of other States, living in counties bordering on North Carolina and doing practice in this State as well as in their own State, will be required to conform themselves to our laws or be subject to the penalties for their violations, if they continue to practice among our people. The officers of the law will no longer require that a physician shall make affidavit that there is a professional man in any city practicing without the license of law. For if the accused is registered he has exhibited to the Clerk of the Superior Court of his county his license, or diploma, or made oath, as the case may be, which shall entitle him to practice, and if he is not registered, then this is a fatal flaw in his right and is itself an affidavit for the officer of the law. Again, it is necessary that all physicians in the State shall register before the beginning of the year 1890, and all who have not registered before that time must be licensed first by the Board of Examiners to entitle them to registration, a diploma or the oath above-mentioned being then of no value in obtaining the clerk's certificate.

The interests of this Society, the maintenance of law and good order and the support of the work of the Board of Examiners will be enhanced by the personal efforts of every one of us towards the prompt enforcement of the law as it now stands. Shortly after midsummer every physician in the State whose address can be had will receive a copy of this amended law, and every Clerk of the Superior Court will be in possession of like copies and of the book of registration and the certificates of the same. The doctors of medicine in North Carolina will all now have to fall into line and willingly or unwillingly aid the efforts that this Society has made to elevate the character of the profession and to protect the lives of the people of the State.

As we have said, able legal counsel was employed in accordance with your direction to guide the work of the Committee. A form of certificate has been adopted for the registration and is now in the hands of the printer. These will be conveniently bound together and form a permanent record of the profession in North Carolina after this date.

The Committee has likewise provided for the printing, in convenient form, of the laws, as amended, and for their distribution, and we ask that the necessary expenses incurred in our work be allowed, and that a motion empowering us to draw upon the Treasurer for the money to cover these bills be adopted.

GEO. GILLETT THOMAS,
RICHARD H. LEWIS,
AUGUSTUS W. KNOX,
Committee.

Dr. Thomas F. Wood moved that the Committee be continued and be authorized to draw upon the Treasury for the amount necessary to carry out the provisions of their work. Carried.

Dr. Thomas F. Wood—After considering this law and the work it has done, I think that our attitude now towards the medical profession in this State, as embodied in this law, is the most practical that has been adopted in the United States. Virginia boasts of her license law, and still, in order to appease the multitude, they have had to admit two homœopathists on their Board; of this embarrassment we are quite free. Alabama boasts of her law, but it is quite faulty in that it has a system of county examiners; the machinery is complicated, and is far below the law of North Carolina. I have been traveling a good deal over the United States during the last year, and wherever I have gone the license law of North Carolina is looked upon as the most adxanced in the Union. I believe this law will for the next twenty-five years put our State in the best position in the entire country, and will be considered the model for many years to come. I feel that the Committee deserves all the praise we can give them.

Dr. Reagan—I move that the thanks of the Society be extended to this Committee for the very efficient work they have done. Carried.

Dr. T. D. Haigh—The Legislature has given us the law we want, but unfortunately our Constitution does not conform to that law. Now, we must not stultify ourselves; we must make our Constitution conform to the law we have asked for, and I move the following amendment to

"All registered physicians and those entitled to register by the law of 1889, and all licentiates of the Board of Examiners, may be eligible to membership provided they receive a two thirds majority of the members at any regular meeting of this Society, and all sections conflicting with this resolution are hereby repealed." Lost.

Dr. Young moved that Article 3 Section 8 be amended so as to read "prior to March 7, 1889," instead of "prior to January 1, 1880," which he contended would cover the whole ground.

After a considerable amount of discussion the President appointed a Committee consisting of Drs. Haigh, Thomas, Carr, Young and I. W. Faison to draft an amendment which would bring the Constitution into conformity with the new law.

Annual Transactions not Received Soon Enough.

Dr. Foote complained that the "Transactions" of the Medical Society were not published until six or nine months after the meeting, whereas there was a By-Law providing that they should be published within sixty days after the month in which the meeting took place.

Dr. C. J. O'Hagan—The American Medical Association, from its organization up to a few years ago, published a large volume of Transactions which was generally distributed to the members eight or ten months after the meeting, and after long and careful deliberation they came to the conclusion that the quickest method of distributing the deliberations of that body among its members was to establish a Journal to be the organ of the Society and the papers read and the discussions had were reported weekly in that Journal. The arrangement has given general satisfaction and is considered an improvement upon the old method. This, Society, I think, has adopted the same course, and, as far as I am concerned, I am perfectly satisfied to read these papers, to which I generally listen attentively, when they appear in the NORTH CAROLINA MEDICAL JOURNAL. Doubtless it would be a gain to have these Transactions appear quickly, but the members of this Society are scattered widely and the work is laborious. I would like to see Dr. Foote accommodated, nevertheless I am very well satisfied, and I think most of the members are also satisfied. (General applause.)

Dr. Thomas F. Wood—Notwithstanding Dr. Foote thinks no explanation is necessary, I hope the Society will pardon me if I attempt to explain. If the "Transactions" of the Medical Society were to close in sixty days not more than half the papers would appear. Some of the best papers that are contributed are delayed beyond reason, although we have a standing rule that all papers are to be in by a specified time. That is one reason the "Transactions" are so slow in appearing. It would materially lessen our standing if the "Transactions" were published without the best papers. It is easy enough for gentlemen without experience to complain. I have had twelve years experience and know what the difficulties are. I have always tried to do what was best for the Medical Society of North Carolina [applause], both by personal sacrifice and by close attention to the interests which were entrusted to me. I do not wish to enter into the feeling which seems to have characterized Dr. Foote's remarks, but I can state that in no sense whatever is the Medical Society the parent of the JOURNAL. At the Fayetteville meeting of this Society in 1878 a committee was appointed to inquire into the feasibility and propriety of publishing a Medical Journal. I was invited before that Committee to express my opinion. Dr. DeRossett, of Wilmington, was also invited, and we gave it as our opinion that it was impossible, that it had been tried and had utterly failed, leaving a debt of $600, which had finally to be liquidated by this Society at a great deal of trouble. Notwithstanding the very year following Dr. DeRossett and myself, at great personal risk and at an expense you would hardly believe—a cost of nearly $2,500 before one cent of profit came in, started the Medical Journal. It subsisted independently of the Medical Society, and was in no sense a child of the Society, and when the Medical Society of North Carolina honored us by making the JOURNAL the organ of the Society, it was not through solicitation, but on the recommendation of the President of the Society. I understand, as well as other gentlemen do, that the appearance of the "Transactions" of the Society at such a late date is a matter that ought to be corrected. You must remember, though, that editors have not always control over publishers, but I do not believe that the "Transactions" will ever be so late again. This year many circumstances have combined to delay the publication of the "Transactions," but when I inform you that I used every effort to get them out at an earlier date I believe the Society will take my word for it. (Applause.) I agree with Dr. Foote in regard to the delay, and I regret it, but when he says that the Society is so little known because the "Transactions" are so late in being sent out, he forgets that the Medical Society gets the benefit of the circulation of the JOURNAL in many States in which the Society would never be heard of except through the JOURNAL; it is through the medium of the JOURNAL that the State Board of Health and our judicious laws are known throughout the Union. My subscription list extends all over this country in parts that a volume like these "Transactions" would never reach. Just as soon as the minutes of this meeting are ready for the printer you get them. Subscribers have the advantage of getting all of these papers *seriatim* month by month in the JOURNAL for their libraries. I desired to make this explanation, and if the Medical Society should see fit to withdraw its patronage it would not ruin the JOURNAL. It is well known that the JOURNAL has expended every effort in the interests of this Society, and it has also expended money that will never be known. (Applause.)

Committee of Scientific Inquiry.

Dr. Haigh said that at last year's meeting a committee of scientific inquiry, consisting of six members, had been appointed whose duties and functions were to inquire into mooted questions agitating the medical world. The Committee had never been notified of its appointment, and he would be glad if the members would meet him in the Hall after the meeting had adjourned. He also invited Dr. Thomas F. Wood to be present in order to give them the benefit of his experience.

Report of Committee on National Formulary.

The report of the Committee on the National Formulary was presented and adopted, as follows:

Your Committee recommend the adoption of the National Formulary by the profession in our State, believing that thereby there will be secured more uniformity in medical prescriptions, especially as regards some of the standard medicinal preparations.

JAMES A. HODGES,
J. T. NICHOLSON,
J. M. DUNLAP,
Committee.

Report of Committee on Nominations.

The report of the Committee on Nominations was presented and adopted, as follows:

President:
DR. GEORGE GILLETT THOMAS.

Vice-Presidents:
Dr. R. L. Payne, Jr.,
" Richard Dillard,
" S. D. Booth.

Secretary:
Dr. J. M. Hays.

Treasurer:
Dr. C. M. Poole.

Orator:
Dr. W. J. Jones.

Board of Censors:
Dr. A. B. Pierce,
" T. D. Haigh,
" W. T. Cheatham.

Committee on Publication:
Dr. Thomas F. Wood,
" W. W. Lane,
" J. M. Hays,
" T. S. Burbank.

Delegates to Virginia Medical Association:
Dr. L. G. Broughton,
" W. W. Grigg,
" Geo. A. Foote,
" Henry H. Dodson.

Delegates to South Carolina Medical Association.
Dr. George W. Purefoy,
" George Graham,
" A. J. Battle.

Obituary Committee:

Dr. S. S. Satchwell,
" W. J. Jones,
" George A. Foote.

Delegates to American Medical Association:

Dr. Charles J. O'Hagan,
" T. D. Haigh,
" R. H. Lewis,
" W. T. Ennett,
" W. J. Lumsden,
" G. G. Carr,
" Thomas F. Wood,
" H. H. Harris,
" W. R. Wood,
" J. H. Tucker,
" George W. Long,
" H. B. Marriatt,
" Julian E. Wood,
" W. J. Jones,
" George E. Foote.

Time of Meeting Changed.

Dr. J. M. Hays said that when selecting a place for meeting next year the Society had neglected to fix the time, and he proposed that this be now decided.

After some discussion, it was decided to meet on the fourth Tuesday in May, 1890.

Report of Section on Gynecology.

Dr. Burbank read the report of the Section on Gynecology. Referred to the Committee on Publication.

Report of Committee on Amendment of Article 3 *Section* 8.

Dr. Haigh, on behalf of the above Committee, proposed the following amendment, which they believed would bring the Society into conformation with the law and at the same time leave the Society open to decide as to the eligibility of the candidates:

"All physicians in good standing who have complied, or shall comply, with the law of the State ratified February 28, 1889, and who shall receive the approval of the Committee on Credentials and a two-thirds vote of the members present at any regular meeting of the Society, shall be entitled to membership. All laws and parts of laws in conflict with this Section are hereby repealed. Adopted.

Dr. Carr moved that the report of the Committee be spread upon a separate page of the minutes of the Society. Carried.

Tenure of Office of Board of Examiners.

Dr. J. M. Hays called attention to the fact that the Board of Examiners were elected on the 6th of May, 1884, and their term of office would expire on the 6th of May, 1890, whereas the Society did not meet until the 22d May, 1890.

Dr. Baker said the By-Laws did not fix any time for the Board of Examiners to terminate.

A discussion ensued as to the desirability of fixing a time in the Constitution for the duration of the Board of Examiners, when it was decided that it was not necessary to fix any period as the Society could dissolve it at any time and appoint successors.

Conjoint Session with State Board of Health.

Dr. Thomas F. Wood moved that the Society go into conjoint session with the State Board of Health for the election of two members to fill vacancies on the Board. Carried.

Dr. J. W. Jones took the Chair.

Dr. Thomas F. Wood—I forgot to mention yesterday that the Governor has nominated to the State Board of Health on behalf of the State Dr. J. H. Tucker, Mr. J. L. Ludlow and Prof. Venable. These nominations do not require the confirmation of the Medical Society.

Nominations for the Two Vacancies.

Dr. Graham nominated Dr. Paul B. Barringer.

Dr. Burkank nominated Dr. Julian M. Baker.

Dr. C. J. O'Hagan—I take pleasure in seconding the nomination of Dr. Baker. You know him as well as I do; you know what an efficient officer he has made in the position he has just resigned. The industry and zeal he has shown in the performance of those onerous duties give us a guarantee that he will give us like satisfaction in any position we may assign to him. He possesses in an eminent degree the qualifications which fit him for this office, he having made hygiene and sanitation almost a special study for many years, and I believe that if elected he will give as much satisfaction as his predecessor has given. I do not think you can make a better selection than Dr. James M. Baker.

Dr. Hodges—It must be a source of pleasing satisfaction to you, sir, as it is to myself, to know that in this distinguished body there are so many who are capable of performing the functions of any office that is within our gift, not only with credit to themselves, but with honor to the Society. In our midst the young stand side by side with the old in their endeavor to advance the interests of humanity and sanitation, and while I would draw no invidious comparison nor any discrimination, still I arise as a young man to second the nomination of one of the young men brought before you today. I would in no sense say that one is better than another. As I have said, I am proud that we have so much material among us—material among the older men, whose words have fallen like apples of gold before us younger brothers, but have also among the young men some qualifications which are not among the older, namely, the young blood, the young energy, the fresh push and vigor of young manhood, and as one amply qualified and possessing all these advantages, I second the nomination of Dr. Paul B. Barringer.

Dr. Haigh placed Dr. J. A. Hodges in nomination for one of the places to be filled on the Board of Health.

Dr. Faison—It is with great pleasure that I second the nomination of Dr. Hodges.

Dr. J. M. Hays moved that the vote be taken by ballot, and that the two who received the greatest number of votes be declared elected. Carried.

Dr. Thomas F. Wood reminded the meeting that the two candidates, in order to be elected, must receive the votes of a majority of the members present.

A ballot was then taken, and it was found that Drs. Hodges and Baker had received a majority of the votes.

On motion of Dr. Barringer the vote was made unanimous.

The Conjoint Session then adjourned.

The Medical Society was then called to order again by the President.

Dr. Carr Withdraws His Resignation.

Dr. Haigh—It is with great gratification I announce to the Society that our friend Dr. Carr has consented to withdraw his resignation. (Cheers.)

Dr. T. J. Moore Admitted as an Honorary Member.

Dr. C. J. O'Hagan—Among the names entitled to the distinction of honorary membership of this body I would respectfully suggest the name of Dr. Thomas Moore, of Richmond. For many years he was an efficient and active member of this body, and from causes which he no doubt deemed satisfactory (probably to secure a wider field for his talents), he moved to Richmond, but still his affection for this Society continues, and he frequently returns to our meetings to participate in the discussions.

Dr. Foote seconded the motion, and said it would give him great pleasure to vote for it.

Dr. Young—I also desire to second that motion. I have known Dr. Moore from my infancy, and have always been taught to love and venerate him.

The vote being taken, Dr. Moore was declared elected to honorary membership in the Society.

Invitation to the Banquet Declined with Regret.

Dr. C. J. O'Hagan—A very ungracious task has been imposed upon me and one that I rise most reluctantly to perform. The citizens of this city, in the overflowing hospitality which characterizes this section, propose to entertain this Society at a banquet to-night. I fear that it will be impossible for us to accept the honor which has been offered to us. In all probability quite a number of us will leave this evening for Norfolk, and those who propose to leave for home by the Southern railroad will, if they possibly can, depart this evening likewise, and if the ladies and gentlemen who propose to extend us this hospitality only find it accepted by a small fragment of this Society, it would appear almost an implied contempt of the honor which they propose to do us. To avoid that, and to save trouble, I think it would be best for this Society to simyly return a vote of thanks for the many kind hospitalities the members have received and which they have been compelled to decline.

Remarks of Mr. Lamb, of the Local Committee.

Mr. Lamb—As Chairman of the Committee appointed by the citizens of this city I desire to express our regret at the unfortunate circumstances that have attended our efforts to make the visit of the Medical Society of North Carolina pleasant. The weather has been very bad. Nothing palliates the condition of the weather, and we assure you that we do not have anything of this kind more than once in a lifetime, and we have not been in any sense responsible for it. We had secured a steamer and had expected and desired to take you down to one of our large fisheries, and had intended to give you an old-time fish dinner down there, and in addition, as you have already been informed, we hoped to have you here to-night to a banquet, and I repeat that we regret very much that you decline our invitation to the banquet to-night. I assure you, on behalf of our citizens, that we have enjoyed the session of this body in no small degree. We have realized the fact fully that the medical profession of North Carolina is composed of a body of gentlemen who rank, as professional men, with any on the face of the earth. I have never seen a more determined body of gentlemen, and you have worked so continuously that our people have not had the opportunity of making your acquaintance in the way they would have liked, but I assure you we shall remember this Society with lasting respect.

Inauguration of Dr. George Gillett Thomas as President.

Dr. Graham—The time has arrived when the gentleman elected President be called to the Chair, and I now move that Drs. Baker and O'Hagan be requested to escort Dr. George G. Thomas to the Chair.

Dr. J. W. Jones—Gentlemen: You have on several occasions witnessed the scene now being enacted, the transfer of this emblem of authority to the successor who is to preside over your deliberations, and I take especial pleasure on this occasion in handing it to a gentleman who is known, not only in his own State, but throughout the whole Southern country, and especially to the medical profession. He is known on accout of his professional ability, his intellectual attainments and his nobility of soul, and I am satisfied that in the discharge of the duties pertaining to this responsible office he will fully sustain his own reputation and bring additional honor to the Society.

The New President's Reply.

Dr. George G. Thomas, the President elect, then said: To say that I did not expect such an honor as this, that it is a most brilliant surprise, will but faintly convey my feelings. If my earnest, and I had thought humble, efforts to do what I considered best for this Society have deserved anything at your hands, then I shall try to show you that you are not mistaken in your choice. I highly appreciate the honor which you have done me, and I thank you most heartily for this expression of your confidence. I need hardly say that I will do the very best I can for the Society, and I ask your kind indulgence, and will expect your intelligent aid in the administration of my office.

Paper on Etiology—Malarial Fever.

Dr. W. J. Jones moved that Dr. Murray's paper on Etiology and Malarious Diseases be referred to the Committee on Publication. Carried.

Paper on Ulceration of the Cornea.

Dr. Graham moved that the paper of Dr. White, of Richmond, on Ulceration of the Cornea, and which he had not had an opportunity to read, be referred to the Committee on Publication. Carried.

Vote of Thanks to the Local Committee of Arrangements.

Dr. Young moved that the Society return to the Local Committee of Arrangements and to the citizens of Elizabeth City its sincere thanks, with the assurance that we have enjoyed our visit to their city. Carried.

Report of Committee on Credentials.

The Committee on Credentials reported the following names for membership, which report was adopted: T. J. Burbage, Riddicksville; W. B. Fioring, Elizabeth City; W. C. Melton, Coneto.

Chairmen of Sections.

The President read the Chairmen of Sections as appointed, as follows:

Practice—Dr. L. G. Broughton, Reidsville.

Surgery—Dr. John H. Faison, Faisons.

Obstetrics—Dr. B. F. Dixon, Oxford.

Gynecology—Dr. George W. Purefoy, Asheville.

Materia Medica—Dr. D. G. Caldwell.

Anatomy and Physiology—Dr. W. J. Lumsden, Elizabeth City.

Pathology and Microscopy—Dr. J. M. Baker, Tarboro.

Therapeutics—Dr. J. M. McGee, Jr., Lumberton.

State Medicine and Medical Jurisprudence—Dr. J. A. Hodges, Fayetteville.

Local Committee of Arrangements for Oxford Meeting.

The following gentlemen compose the Local Committee of Arrangements for the Oxford meeting, May 22, 1890: Drs. J. M. Hays, B. F. Dixon, S. D. Booth, O. Gregory, J. M. Emmett, P. B. Booth.

Dr. Duffy's Prize Committee Continued.

Dr. Poole announced that Dr. Duffy requested that the Committee to award the prize offered by himself to the Society be continued for another year.

Adjournment Sine Die.

Dr. Poole moved that the Society no now adjourn, to meet in Oxford the fourth Tuesday in May, 1890.

LICENTIATES OF THE BOARD OF MEDICAL EXAMINERS OF NORTH CAROLINA.

WILMINGTON, N. C., April 24, 1889.

The following gentlemen were successful in their examinations for license by the Board of Medical Examiners, at their recent session in Elizabeth City:

At the regular annual meeting of the Board of Medical Examiners of North Carolina, held in Elizabeth City, April 15, 1889, *et seq.*, the following applicants for linense, after furnishing a testimonial of good moral character in each case, and after submitting to a thorough written examination upon all the branches of medicine and surgery, were duly licensed in accordance with the laws of North Carolina relating to the practice of medicine, viz:

Dr. M. C. Strickland, Bliss.
" A. L. Wynn, Ridgeway.
" C. E. Ross, Charlotte.
" Edward S. King, Statesville.
" J. H. Marsh, Gray's Creek.
" John W. White, Wilkesboro.
" E. L. Cox, Catharine Lake.
" C. M. Benton, Newton Grove.
" Thomas S. McMullan, Hertford.
" William H. Cobb, Jr., Goldsboro.
" Edgar H. Sugg, Snow Hill.
" Charles M. Strong, Charlotte.
" Howard K. Edgerton, Kenley.
" A. Y. Linville, Belew's Creek.
" W. J. Richardson, Greensboro.
" G. A. Renn, Raleigh.
" W. H. Nicholson, Franklinton.
" W. W. Vines, Tarboro.
" J. H. Frey, Greensboro.
" Jefferson D. Jenkins, Tarboro.
" A. Y. Fitzgerald, Linwood.
" O. L. Denning, Dunn.
" T. J. Hoskins, Edenton.
" J. H. Thacker, Reidsville.
" W. G. Sutton, Seven Springs.
" J. M. Ward, Moyton.
" James P. Battle, Rocky Mount.
" Edward R. Michaux, Greensboro.
" G. M. McAden, Charlotte.
" J. F. Highsmith, Hives.
" Braxton Banks, Banks P. O.

Dr. Albert Anderson, Wilson.
" George I. White, Jefferson.
" W. H. Hughes (colored), Greensboro.
" H. H. Hall (colored), Salisbury.
" T. R. Mask (colored), Rockingham.
" E. C. Starns, Asheville.
" S. H. Cannady, Wilton.
" P. Alston Nicholson, Washington.
" John A. Davis, Tarboro.
" William A. Graham, Charlotte.
Also,
" ——— Houston, ———
" ——— Tayloe, Hertford.
" Richard Whitehead, University of Virginia.
" ——— Stokes, Magnolia.

The day of mercurials as blood alteratives is past, and vegetable alteratives have now universally taken their place. The Succus Alterans (McDade), manufactured by Eli Lilly & Co., of Indianapolis, is a rare product, and is winning laurels wherever used. Their Elixir Purgans is also valuable.—*Chicago Medical Times.*

Painless Cathartic.—L. L. Gray, M.D., Central City, Mo., says: "As a cathartic, I find Acid Mannate especially adapted to the treatment of children, being, in the first place, pleasant to the taste. It is well borne by the stomach, and its action is as certain as it is painless. In short, it is as indispensable as a cathartic as quinine is for malaria.

Vomiting in Pregnancy.—I am using Peacock's Bromides in my practice, daily, and am better pleased with the preparation than ever. I have discovered a new application for it in a case of vomiting in pregnancy. Believing that the sickness was produced by nervous irritability, I have and am giving Peacock's Bromides in full doses with fine effect. I have prescribed it several times lately in convulsions of children with very satisfactory results.

Franklin, Tenn. E. F. Conynghame. M.D.

NORTH CAROLINA

MEDICAL JOURNAL.

THOMAS F. WOOD, M. D.,
GEO. GILLETT THOMAS, M. D., } Editors.

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ORIGINAL COMMUNICATIONS.

HIGHER MEDICAL EDUCATION AND HOW TO SECURE IT.

The Annual Address before the Alumni Association of the University of Maryland, by RICHARD H. LEWIS, M.D., of Raleigh, N. C., delivered April 8th, 1889.

Mr. President and Fellow Alumni:

It is with mingled emotions of pride and diffidence that I appear before you this evening in so conspicuous a rôle. It is exceedingly gratifying to me to know that I have been deemed worthy of so high an honor by a body representing so much intelligence and culture as this Association; but I cannot escape a feeling of trepidation when I realize that the words which are to fall from my lips will be heard and judged, not by my contemporaries and juniors only, but also by the Gamaliels at whose feet I sat not many years since. I am sure, however, that increasing years have not diminished the kindly courtesy for which we loved them in by-gone days, and so I am encouraged to look for at least a lenient, and I hope an approving, judgment on what I have to say to you to-night on the subject of

HIGHER MEDICAL EDUCATION AND HOW TO SECURE IT.

The "living present" is not only animated, but it fairly throbs with vitality. Science is advancing with truly giant strides. The wheels of progress in every department of life revolve with such rapidity as almost to make one's head swim. We are bewildered by the wonderful discoveries of the day, and we are almost afraid to say that anything is impossible, no matter how marvelous, and, according to our old standards, incredible it may be. We would hardly be surprised to hear some one call: "All aboard for San Francisco and Hong Kong by Ærial Route"! Nor would the appearance of Aladdin himself, with his wonderful lamp, excite more than feeble astonishment. Indeed, I am not so sure that Aladdin would not be ashamed to pull out his old lamp before the mighty necromancers of the present. The mistress of our household presses her dainty foot apparently upon the carpet under our mahogany, and lo! a Genius from the enchanted regions below appears bearing viands that might have made even Aladdin's mouth water. A very few short years ago we would have read as a fairy tale an account of the telegraph, the telephone, the phonograph, electric lighting, the transmission of power and all the other marvels of electricity alone, to say nothing of the many other wonders of our time, which are now every day common-places.

But it is not only in material progress that an era is noted. Its annals will show remarkable advances on spiritual and intellectual lines as well. Philanthropy, the noblest of all the many "issues" of the day, is one of the striking features of our civilization. The true principles of the religion of Jesus of Nazareth seem to be more clearly apprehended by His followers, and at least one of the two great commandments on which hang all the law and the prophets—that we should love our neighbor as ourself—comes nearer being obeyed than ever before in the history of the world. Regard for the welfare of others, however, is not entirely confined to those who call themselves Christians. Some who do not acknowledge allegiance to Him, although no doubt their hearts have been unconsciously warmed by the reflected rays from the Sun of Righteousness, join most cordially in the work of making others better and happier. In fact, so prominent has this sentiment become that we have it dignified as a new religion, and the Gospel of Humanity is a familiar phrase. But no matter what may be the origin of the development in this direction, every generous man must rejoice at it, and the heart of every true physician must swell with pride in his profession when he realizes that no other calling does so much as his own in this truly noble and divine work.

But, after all, in nothing is the progress of the age more marked than in the spread of learning. The school-master is indeed abroad in the land, and the knowledge which was not very long ago the privilege of the select few is now almost as free as water to every one who will drink at its fountain. And not only is knowledge more widely diffused among the people, but in its higher departments, and especially in the natural sciences collateral to that of Medicine, the development in the last few years has been enormous. By means of the methods and appliances furnished by them our science has been greatly assisted in its rapid march forward. Its progress has been so great, it has been so amplified and specialized, and consequently, in many respects, has become so technical, that its mastery in its entirety is at present practically impossible, even to the ablest and best equipped. Such being the case, it is clearly incumbent on the purveyors of medical learning to see to it that every aid is supplied to those seeking at their hands the means of accomplishing this herculean task. Is this done by the old methods? Can they be improved? In common with a great many others, I think they can be, and in the following ways chiefly:

By requiring satisfactory evidence of a good general education as a condition of matriculation.

By grading the course of instruction.

By combining the text-book and lecture systems.

By lengthening the time of study.

By making hospital attendance for, at least, a few months compulsory.

By raising the standard of graduation.

To require some proof of fitness from one seeking to embark on the study of medicine before allowing him to set sail upon that vast and difficult sea, it seems to me, is not only reasonable and proper but nothing more than justice to the student demands. It must be admitted that no one is adequately prepared to undertake the successful study of an elaborate and technical subject who does not already possess a fair, not to say a liberal, general education. The training of the mind and the accumulation of what might be termed fundamental knowledge, are necessary preliminaries to higher studies. And in no case are they more necessary than in the study of medicine, especially as it is usually taught—by lectures mainly. To intelligently apprehend a lecture on a subject bristling with details and technicalities requires such familiarity with language, such an acquaintance with the general and collateral facts, that it is impossible for any one, no matter how bright he may be by nature, to properly take it in unless he is well educated. This being true it follows that to such an one many of the lectures are simply *vox, et prœterea nihil.* Nor can he read the writings on these subjects intelligently with sufficient rapidity to get over the ground required in him. He runs the race heavily handicapped, and, unfortunately, comes out too often, a loser. But it is no more than we ought to anticipate. It would be unreasonable to expect an artisan to construct a nice piece of mechanism without the proper tools, and it is none the less unreasonable to require a medical student to build up in his mind this complex scientific fabric without the necessary intellectual aids.

The proper grading of the course of instruction I regard as of more importance than the preliminary examination. The need for the latter is only a partial one, for doubtless most men who take up the study of medicine are sufficiently well prepared, but the former applies equally to the well-educated and the ignorant. We cannot expect any one to understand disease—departure from the normal—when he does not know what the normal is. In the erection of a building the first step is to get a solid foundation, and in the acquisition of our science the first and most important step is the mastery of its fundamental branches. The failure to properly lay the foundation stones of anatomy and physiology and materia medica has caused the discomfiture of many a physician. His house was built upon the sand, and when the storms of practice—the serious emergency cases—arose and beat upon it, it fell. The medical student, it is true, is supposed to have familiarized himself with these branches while working under a preceptor, but the study done in a doctor's office, as a rule, amounts to very little in results. Nevertheless, when he enters college he is at once flung into a perfect mælstrom of lectures covering the whole science of medicine. He can, of course, only partially understand those devoted to the higher branches, and the result is that he gets confused or false impressions, which must be either cleared up in after years or unlearned altogether, though his principal misfortune is that the loss of time and wear and tear on his energies prevent more and better work on the elementary studies. In a word, a child must walk before he can run. The grading of the work in such a manner as to allow the student ample opportunity to lay the foundations of his profession broad and deep would surely aid most effectually in promoting the cause we advocate.

But this grading cannot be properly done without setting apart more time for the acquisition of the profession, either by lengthening the terms as now arranged, or by increasing the number of courses. The latter I regard as preferable because it would compel the devotion of a longer time to study before graduation. During the intermissions the student would have abundant opportunity to take up the loose ends and properly arrange the knowledge which had been forced into his mind in a rather hurried, and, perhaps, owing to the multiplicity and difficulty of the subjects, somewhat confused manner, during the term. He could, as it were, graze the rich medical pastures during the sessions, and in the vacations quietly chew the cud of reflection and digest his knowledge. Another great advantage of having a longer period of study would be fewer lectures a day. According to the plan prevalent in most medical colleges the whole of this vast science of ours must be gone over, from osteology to astigmatism, in about twenty-four weeks, and to do this requires from five to seven lectures a day. No one who has ever tried it himself will be disposed to claim that so much knowledge, and that, too, of a rather tough and indigestible character, can be absorbed in so short a time, even when administered in the attractive and palatable form that we have not forgotten; and the most enthusiastic of us will doubtless admit that towards the last part of the seventh hour he usually "got down to where it didn't taste good." Still another and very great benefit to be derived from having fewer lectures a day is that the student would have time to study in his text-books the subjects to be lectured upon, and in that way prepare himself to appreciate their elucidation by the professor. It would also permit the teacher to give a little more time to each lecture, so that he might himself quiz the class on his own branch—a manifest advantage. By allowing time enough for this method to be properly observed the professional knowledge could be acquired through the avenues of both sight and hearing, and it could be cleared up and fixed in the student's mind—clinched, so to speak—by requiring him to put it into words himself, or hear it done by some one else in his own situation.

The science of medicine is eminently a practical one. It is, from the nature of things, largely empirical, and is, in fact, as much of an art as a science, if not more so. This being true, actual experience is a necessary feature in its proper acquirement. This is admitted by the medical colleges, and great stress is laid in their catalogues on the superior clinical advantages offered to their students. But what are these clinical advantages, as we generally find them? Nothing more, in fact, than the usual clinical lecture, which, unless the patient have a disease with coarse objective signs (a very small class), amounts to practically nothing more than a didactic lecture under another name. They are consequently of no special value as a means of instruction, ordinarily. To be of real value the lectures must be at the bedside and to a number small enough for each one to examine the patient with eye and ear and hand. The training of the special senses is as important in physic, which, as I have just said, is an art as well as a science, as the education of the mind. This cannot be acquired without actual seeing, hearing and handling, and the facilities for this exercise are only to be found in hospitals, and attendance upon them should, therefore, be made compulsory.

I shall never forget my own first experience as a practising physician. While chiefly amusing, the memory has a tender and pathetic interest from its association with the lamented Ambler, one of the noblest spirits that ever left our walls to become immortalized by the unselfish and heroic sacrifice of life itself in performance of duty.

I had just become an inmate of the Infirmary—a kind of supernumerary assistant physician, just above the undergraduate clinical assistants. Dr. Ambler, who was then assistant to Dr. Conrad, the Resident Physician, came into my room one morning and asked me if I did not want a case--that a physician had been sent for to one in German street. I eagerly seized upon the opportunity offered to "flesh my maiden sword," as it were. Then a doubt as to my ability to successfully cope with the adversary entered my mind. I asked what seemed to be the matter. The Doctor said the description of the messenger suggested pleurisy. I asked: "What shall I do if it is pleurisy"? He told me, and thus armed I started out on my first professional visit with enthusiasm; but just as I was going out of the door I was transfixed by the thought that it might *not* be pleurisy, and in my demoralization I said: "But suppose it is not pleurisy, what shall I do"? The Doctor had to give that up, of course, and I hurried on. I found a girl of eleven years of age with the history of a chill, a flushed face, great heat of skin, a pulse of 140 and correspondingly rapid respiration. With my mind full of pleurisy I percussed and auscultated her chest *secundem artem*, so far as the patient could tell, but learned nothing. How could I learn anything when I wouldn't have recognized a friction sound if it had been rubbed on my tympanic membrane? I had heard of such a thing, but I had never heard the sound, and not being acquainted with it I did not know it. I was utterly and hopelessly at sea. I prescribed a placebo and said I would call again in the evening. Until that second visit I was weighed down by a dreadful sense of responsibility; but when I called again and found her "sitting, and clothed, and in her right mind," so to speak—entirely well to all appearances—the load was lifted. Then for the first time the nature of the attack began to dawn upon me through the confused and misty knowledge with which my mind was filled—the light coming from no book or lecture, clinical or didactic, but from my own experience, when, as a boy living in a malarial climate, I became personally acquainted with chills and fevers. My patient had "intermittent fever," and I conducted the case, I am proud to inform you, to a triumphant conclusion.

The student cannot, of course, be expected to remain in hospital long enough to become a thorough diagnostician, but every one should be required to attend sufficiently long to become practically familiar with the methods of diagnosis. A secondary, though almost equally good, reason for making this requirement is, that the embryo physician may become so familiar with the aspect of disease in general as not to be afraid of it and unduly exaggerate the importance of some, and diminish that of other, common symptoms—so that, in short, he may be enabled to exercise his judgment calmly and deliberately in applying the principles of his profession to each new case as it arises. But it is unnecessary to argue further the extreme value of hospital experience whenever it can be obtained.

The average medical student, notwithstanding frequent reminders of the nobility of his chosen profession, is very much like other people—and perhaps "a little more so," if we are to judge by those immortal types, Bob Sawyer and his friend Ben Allen—and he is not going to do any more work, especially when surrounded by the allurements of a large city which have usually the additional attraction for him of novelty, than he is compelled to do. So, in fact, no matter how perfect his college may be in every other respect, he will only do, as a rule, just enough work to get his diploma. Consequently in no possible way could the cause of higher medical education be so much assisted by our medical colleges as by the requirement of a higher standard of graduation.

It cannot be claimed with truth that first-class physicians—the equals of any in the world—have not been developed by the old methods which are still generally in use—the annals of American medicine are too crowded with brilliant names to allow it; but I think it can be fairly urged that the average of the profession is by no means so high as it would be if the requirements suggested were enforced. It would be unscientific to draw our conclusions from the few brilliant exceptions, instead of from the general mass. This being admitted, the query arises: How can the colleges be induced to improve their methods and raise the standard of graduation? In my opinion by legislation on the part of the different States, and by legislation only. That opinion is based on the following reasons: Very few medical colleges in this country are endowed at all, and still fewer sufficiently so to make them independent of patronage. Nearly all are private corporations entirely dependent upon the fees of their students. Owing to the facility with which any kind of charter can be obtained from the Legislature of nearly every State, the origination of a medical college is a very easy matter. In consequence there has been, and I regret to believe continues to be, an over-production in this direction. But the penalty of over-production has been paid by very many. The track of medical science in this country is strewn with the wrecks of such institutions. Of 267 medical colleges chartered in the United States and Canada, in the past century and a quarter, 136, or more than half, are now extinct. But still they are more in number than the students to be educated will warrant, and, as a result, the struggle for existence is exceedingly fierce, and only the fittest continue to survive. And these, namely, the institutions which, owing to their hold upon the profession derived from the ability and high character, personally and professionally, of their faculties, and the *bona fide* facilities for instruction supplied, succeed in riding out these storms of competition, come out in a more or less damaged state. There are some things to which a man of honor could not stoop under any circumstances, but when the question before him is bread his ideals are not apt to be so lofty nor so highly polished as in times of prosperity. And so with these old aristocrats among the medical institutions of our country. While they have been too self-respecting to descend to the level of mere "diploma mills," they have been, in many instances, I fear, compelled by the exigencies of existence to lower their standard more than they would, I am sure, have preferred.

Now, how are these really admirable dispensers of sound medical learning to be protected from this debasing competition, which, as soon as overcome, springs up anew? Greater care on the part of the various legislatures in granting charters of medical colleges might be of use if it were practicable to secure it; but unfortunately there is not at present much hope in this direction. There is another method, however, which has already been tried with very gratifying results so far, and the promise of still richer fruit in the not remote future. I refer to the creation by some of the States of independent and disinterested boards to pass upon the qualifications of those to be entrusted with the health and lives of their citizens. Some have doubted the power of the State in this matter, but the constitutionality of these laws was settled beyond all controversy by the decision of the Supreme Court of the United States in January last in the case of Dent vs. the State of West Virginia.

Thirteen years ago there was only one State in the Union that really had a medical license law and that, I am proud to say, was "The Old North State." To-day fourteen States have such laws, though they vary much in character and in efficiency. Progress in this direction is destined, I am confident, to revolutionize, and at no distant day, medical education in our land. The movement has been well started and is gaining momentum yearly, and the final extinction of these "colleges" which have been a disgrace to our profession in the past is practically assured. This principle of regulating the practice of medicine by the State is sure to obtain more and more widely, on account of its inherent justice and force, and likewise for the reason that States without a license law adjoining a State with one will be sure to have the professional refuse, the medical garbage, so to speak, of the latter, dumped upon them, and self-preservation will compel protection against such an evil.

This subject of the regulation of the practice of medicine by law in the United States is a most interesting one, and is very fully and ably treated by the Eighth Annual Report of the Illinois Board of Health, and still more completely in a special report, just published, by Dr. Rauch, the Secretary of that Board, "On Medical Education, Medical Colleges and the Regulation of the Practice of Medicine in the United States and Canada 1765–1889," to which those interested are referred. Time will not permit our going into the subject at any length to-night, but a hasty glance may not be amiss.

From the excellent and entertaining paper on "How Far can Legislation Aid in Maintaining a Proper Standard of Medical Education," read before the American Social Science Association in 1888, by Mr. W. A. Purrington, Counsel of the Medical Society of the County of New York, it appears that the State of New York was the first to attempt the regulation of the practice of medicine by law, the first statute having been enacted in the last century, though it, in common with others subsequently passed from time to time, very soon fell into a condition of "innocuous desuetude," and nothing was really accomplished until 1880.

The evolution of this legislation in the fourteen States that have practically done anything has been on two lines: On the one hand, boards of examiners, empowered to issue license to practice medicine after the passage of a satisfactory examination on the part of the applicant, regardless of the possession of a diploma, have been created; while on the other, the power has been conferred upon boards of health or separate boards of examiners, merely to *visé* diplomas from colleges in good standing, and to decide what is meant by the phrase "in good standing," preliminary to issuing license, an examination being permitted only in the absence of such diploma. Under the former head I would class the laws of North Carolina, Alabama, Virginia, Mississippi, Minnesota and South Carolina. Minnesota requires not only an examination in every case, but, in addition, satisfactory evidence of attendance upon three courses of lectures of at least six months each as a necessary preliminary to examination. To the second class, namely, those accepting diplomas as sufficient evidence of fitness to practise, belong Illinois, Missouri, Kentucky, Colorado, Iowa, Maryland, New York and West Virginia.

Kentucky was the first of these States to move in this matter, a law having been enacted in 1874, but it never amounted to much, at best, and, except in a few counties, soon fell into disuse. It was decidedly improved by amendments in 1888, but to Illinois properly belongs the credit of leading in this class, her law passed in 1877 being the best of its kind yet enacted and likewise most rigidly enforced. The Board of Health, upon which devolved the execution of the law, adopted in 1880, and enforced from 1883, a "Schedule of Minimum Requirements," including, among others, an entrance examination equivalent to "a post-grade teacher's certificate," "regular examinations or quizzes by each lecturer or professor daily, or at least twice a week," and "attendance during, at least, two terms of clinical and hospital instruction," as necessary on the part of medical colleges to admission into the category of "medical colleges in good standing." And in 1887 this phrase was, by resolution of the Board, "defined to include only those colleges which shall, after the sessions of 1890–'91, require four years of professional study, including any time spent with a preceptor, and three regular courses of lectures, as conditions of graduation, and shall otherwise conform to the "Schedule of Minimum Requirements" heretofore adopted by the Board," thus making another decided advance. The laws of Missouri, 1885, and Iowa, 1886, are, to all intents and purposes, copies of that of Illinois, and their boards have adopted practically the same regulations.

Now, while the requirement on the part of some of the boards issuing license upon the presentation of a diploma that the college conferring the same shall come up to a certain standard of instruction has unquestionably added very greatly to the value and efficiency of these laws, still the standard of graduation is not, nor can it be, fixed, and this is the weak spot in that method of regulating the practice. A college may conform to all the conditions of "good standing," and yet, by having a low standard of graduation, send forth very incompetent physicians. As bearing on this point the experience of the Naval Medical Board, as given by Medical Director Gihon, in his address before the American Medical Association in 1883 (not to speak of that of other examining boards), is exceedingly pertinent and interesting. I am thoroughly convinced, as are, I believe, most of the friends of higher medical education, that the laws which accept no evidence of fitness other than that afforded by the passage of a satisfactory examination before some disinterested board are the most effective.

Of all the licensing laws of this class I hope I will not be considered boastful in claiming that of my own State to be the best, more especially as that opinion, I am glad to say, is by no means confined to North Carolinians. We claim that it is the best law because of its "brevity, simplicity and lack of detail," which, according to lawyer Purrington, are "the chief *desiderata* in a good law"; because the Board of Examiners is a compact body of seven, elected by the State Medical Society without the interference of any power outside of its own members, and because the medical heresies have no representation on the Board. It is proper to state, just here, however, that it is a rule of the Board, of its own making, not to reject an applicant, competent in other respects, on account of a difference of opinion in the matter of therapeutics.

Inasmuch as North Carolina (not considering the imperfect and imperative laws on the statute books of New York) was really the pioneer in this beneficent work, I hope you will indulge me in a short resumé of what has been done in a modest way in our State to elevate the profession, and, at the same time, protect the people.

In 1859, eighteen years before any other State, the act creating "The State Board of Medical Examiners of North Carolina" was passed. This Board was to consist of seven members, who were to be elected every six years by "The North Carolina Medical Society," which was incorporated at the same time. It was empowered to grant license to practice in the State to all beginning the practice of medicine after the passage of the act upon the passage of a satisfactory examination, regardless of the possession of a diploma. In order to avoid inconvenience, any two of its members were authorized to grant a "temporary license," to be in force until the next regular meeting of the full Board. It was at first required to meet twice a year, at Raleigh and Morganton, but in 1871 the law was so amended as to permit its meeting at the same time and place as the State Medical Society, and also to allow to its members, for the first time, compensation to the amount of four dollars per day and traveling expenses. The only legal penalty for failure to obtain license was inability to collect medical bills by law, although ineligibility to membership in the State Medical Society was a secondary one that was not without influence.

The first Board, which, owing to the war, held only four meetings, examined 31 and licensed 28, or 81.9 per cent. The second Board, which was elected in 1866, granted 21 licenses. The third Board examined 66 and passed 65, or 98 per cent. The first three boards, therefore, examined a total of 122 and licensed 118. As suggested by Dr. H. T. Bahnson, the Secretary of the fourth Board, in his report, "it is probable that no accurate record was kept of applicants who were refused license." The fourth Board was elected in 1878. Of 208 applicants appearing before it, it granted license to 183. Of the 25 rejected 16 were graduates of regularly chartered medical colleges, but it is very gratifying to me to be able to tell you that, although our *alma mater* presented the largest number (29), not one failed to pass. The percentage obtaining license for each year was respectively 87.1, 78.1, 83.3, 80, 96.8 and 94.4. I would call your attention to the great improvement in the quality of those applying the last two years. It was attributable, we thought, to the fact that the medical colleges had finally, after four years experience, come to the conclusion that that particular Board, at any rate, was in earnest. And we were confirmed in the opinion when we were told by some of the applicants that at one college, which was quite popular with our students, a special standard of graduation, higher than for the rest of the class, was required of North Carolina students.

The fifth, or present Board, was elected in 1884, and held its first meeting in May, 1885, at which 101 applied for license and 84 were successful, or 83.1 per cent. In 1886 63 were examined and 46, or 73 per cent., were licensed; in 1887 48, and 34, or 70.8 per cent., and in 1888 53, and 36, or 67.9 per cent., passed. So that, in the four years of its existence, it has examined 265 applicants and licensed 200, or 73.7 per cent. From these figures it is manifest that the standard for license in North Carolina is being gradually raised year by year, although it is now higher than in either Virginia or Alabama, the percentage licensed in the former State in the last four years being 76.4, and in the latter something less than 80.

The examination hitherto have been oral, but I understand that at the next meeting of the Board, beginning on the 15th inst., at Elizabeth City, the examinations will be conducted in writing and the papers held for reference in case of dissatisfaction.

You have no doubt noted the sudden and marked increase in the number applying for license at the first meeting of the fourth Board in May, 1879, from 15 in 1878 to 43 in 1879. The explanation of the fact is that the Legislature, in February of that year, enacted the law creating the North Carolina Board of Health, one provision of which was that none but licensed physicians should be eligible to membership in the County Boards, and, therefore, to the office of County Superintendents of Health, he being *ex officio* county physician. Then again there was another abrupt and still larger increase in the number of applicants in May, 1885—from 36 in 1884 to 101 in 1885. The reason was that the General Assembly in March, 1885, amended the law so as to make it a misdemeanor, punishable by fine or imprisonment, to begin the practice of medicine in the State after the passage of the act without having first obtained a license from the Board of Examiners.

Finding that there was still a disposition on the part of some to evade the law, the State Medical Society appointed, at its last meeting, a committee of three with full power to act, for the purpose of having the law yet further improved, if, in their judgment, it should be safe to bring the subject before the Legislature. This committee succeeded in having the existing law put in better shape and in securing another amendment requiring every person practising medicine in the State to obtain from the Clerk of the Superior Court of his county before the first day of January, 1890, on a form to be supplied by the State Medical Society, a certificate of registration, the only condition precedent thereto for all beginning the practice subsequent to the passage of the amendment making it a misdemeanor in 1885 being a license. This registration will render the practical enforcement of the law comparatively simple and easy.

The history of the legislation regulating the practice of medicine in North Carolina is that of slow and healthy growth, advances being made as public opinion grew up to existing statutes, no more being asked of the law-givers than was reasonable, and concessions being made when necessary to obtain a greater good. For instance, in 1885, when the greatest advance was made in securing a severe penalty, a lion was found in the path in the person of an intelligent and influential medical member of the lower house, who, while a graduate, was not a licentiate, and who chafed at being excluded from his County Board of Health. He was conciliated and his most valuable aid obtained in the Legislature, and the cordial support of the law by many influential medical men all over the State was, at the same time, secured, by accepting an amendment admitting graduates of respectable medical colleges prior to 1880 to all the privileges without license. But for this concession not only would nothing have been accomplished, but the existing law might have been jeopardized.

And it is just for the want of this willingness to agree to a not unreasonable temporary compromise in exchange for most valuable enactments for the future, that so much trouble has been experienced in obtaining medical legislation, I am satisfied. According to Mr. Purrington, who was evidently, in the words of Uncle Remus, "dun had de spe'unce un it," "the stumbling-blocks in the way of every effort to achieve wise medical legislation are: (1) the ignorance and greed of the believers in, and practisers of, *quasi*-supernatural methods of treating disease; (2) the jealousies among the more intelligent adherents to 'isms'; (3) jealousies between the mother church of medicine and those of her children that wish to make of their specialties separate professions; (4) the obstruction from vested interests that consider themselves threatened--the incorporated schools that have some capital invested, and regard their power to confer a diploma operating as a license to practice medicine as their chief stock in trade." To his list I would add the irreconcilables, who will not agree to anything short of the immediate punishment of present rivals, and the impracticables, who must have at once a beautiful and elaborate scheme to be thrust down the throats of an unwilling public, or nothing. Compromises not only aid in obtaining the desired legislation, but they are of signal benefit in eliminating dissatisfied elements and in rapidly and solidly building up public opinion in support of the law, without which moral backing no law can be enforced. As showing the present state of public opinion in North Carolina on the subject of the Medical License Law, I would mention the fact that the recent important amendments passed the General Assembly without a dissenting vote in either house.

But the practical question to be decided is: Has medical legislation, so far, really raised the standard of medical education in the United States? That it has been raised in the past ten or fifteen years, very appreciably, is incontrovertible, and while it is no doubt due, in part, to the desire on the part of the better class of medical colleges to advance, still it is chiefly attributable, I am confident, to the stimulating effect of legislation. As bearing upon this I would ask your attention to the result apparently flowing from what I consider the best law in each class, namely, that of Illinois, the best of what might be called the diploma laws, and that of North Carolina the best of the unqualified license laws.

In 1880, it will be remembered, the Illinois Board of Health adopted its "Schedule of Minimum Requirements." In that year only 45 colleges exacted "certain educational requirements for matriculation"; in 1888 the number was 117. In 1880 the number of colleges "requiring attendance on three or more courses of lectures" was 22; in 1888 it was 47. In 1880 but 42 colleges had chairs of hygiene; in 1888 117 taught hygiene. "The percentage of graduates to matriculates has steadily diminished in the United States from an average of 36.3 in 1881–'82 to 30.3 per cent. in 1887–'88." And the average duration of lecture terms has increased. There is no reasonable doubt that the "Schedule of Minimum Requirements" and the resolution of 1887, quoted heretofore, were largely instrumental in bringing about these results.

The effect of the license law in North Carolina is indisputable. The improvement in the membership of the State Medical Society, which is composed only of licentiates, taken as a whole, in the past ten years, is very marked. But it would be in better taste to let others speak as to our profession in North Carolina. One of the most distinguished medical men of the Old Dominion said to a friend and myself, not long since: "It wouldn't do, of course, for me to say so publicly (and hence I withhold his name—a man that would be weighty in any assemblage of physicians), but I do not hesitate to say to you, gentlemen, that the rank and file of your profession is superior to that of my own State, and I attribute it to your having had a license law longer than we." Another leading physician of the same State, than whom no one is better qualified to speak on this subject, says in a recent letter: "You have the best law in the United States, I think." And again: "I think the North Carolina physicians are, *as a class*, more interested in their profession, and better educated, than those of any other State that I know of and I have no doubt whatever that this is the effect of your State Medical Law." Similar sentiments have also been expressed by visitors from other States, but some of those before me have honored us with their presence and they can speak for themselves. North Carolinians are proverbially modest, and we do not claim to have more intelligent or better educated men than other States, but we *are* proud of our Medical Society. One fact that must not be lost sight of in judging it is, that a large majority of our members are what would be called by the dwellers in cities "country doctors," who, while in reality fully equal in most, and superior in some, respects to their more showy brethren, are not apt to make so favorable an impression upon a casual observer, owing, perhaps, to less style in dress, not so great confidence of manner or readiness of tongue. Still, notwithstanding, they seem to have "held their own" in the opinion of visiting friends, and I am sure that I do not misrepresent them when I say that whatever excellence we may possess is largely attributable to our license law, which has compelled the attainment to a higher level of acquirements.

Now, what particular interest has this subject for us, loyal sons of our *Alma Mater*, assembled here to-night for the special purpose of advancing her interests? Much, I think.

I am confident that I hazard nothing when I say that we are all agreed in the opinion that very few, if any, colleges in this country are her superiors in the ability, medical accomplishments and real teaching capacity of her faculty. She has unsurpassed clinical facilities, with her large hospital advantages practically available to quite a number of her under-graduates as clinical assistants—a valuable feature not developed, so far as I know, to the same extent elsewhere. And these have been still further increased, recently, I am much gratified to learn, by the addition of a Free Lying-in Hospital. She has lengthened her lecture term and she has established and kept up a very fair standard of graduation. But I must confess to a slight feeling of uneasiness lest she flag a little in the struggle. We must not be unmindful of the fact that she is not a "giddy young thing," but a venerable matron of more than four-score, and therefore apt to be endowed with the conservatism that usually goes with years. In this hurrying age, however, the old-folks must bestir themselves or they will be hustled aside and passed by the impudent and irreverent youngsters. And, therefore, I trust that you will not consider it presumptuous in me if I express the hope that she will promptly align herself with the foremost in the race of medical progress; by demanding an entrance examination or its equivalent, by grading the course and by requiring a longer time of study, with at least three courses of lectures—in short, by keeping fully abreast of all the advances in medical instruction.

I realize the practical difficulties in the way of an unendowed institution, but I sincerely believe that, while at first these changes might have some effect on the attendance of students, in the near future, it would add to the financial prosperity as well as to her reputation in the world of medicine. The writing is on the wall, and inferior colleges, deriving their patronage from States having license laws, are doomed. She is now one of the first, and she cannot afford to fall behind her rivals in any respect, and I am confident that she will not. The tide in the matter of medical education has unquestionably turned, and it is becoming stronger and stronger with each succeeding year. May our dear old Mother take it "at the flood" and go on to fortune and to still greater fame and usefulness.

PRESIDENT'S ADDRESS.

Fellow-Members of the Medical Society of North Carolina:

It has been many years since the Medical Society of North Carolina, then only seven years old, held its meeting in this section of the State. Full of ardor and ambition, our Warren, Pittman, the elder Thomas, Satchwell, Summerell, Hines and Winburn, were evolving a fond dream that one day North Carolina would have a State Board of Examiners of strength and moral force enough to influence medical education and professional standards and a medical journal as an educational agent to draw out the latent talent of our medical scholars and establish a method of statistics which would enable those interested to study the sanitary and moral condition of our population.

Many years have passed—some of the bright minds who conceived these, all but Utopian, schemes are numbered with the dead, but *we* are still honored with the presence of a few who saw these infant plans born. A great political and social revolution has shaken our dear old Mother, Carolina, since then, but the faith of the pioneers has, at last, been realized in the enactment of a law, the beneficent effects of which are felt by the profession and the people in the practice of medicine, and in the establishment of a State Board of Health, which, after a hard struggle, is emerging from the experimental condition, and in the establishment of a medical journal, which has now reached its twelfth year, and which, we may say, and are proud to say, is a most worthy and a most honorable exponent of the profession in North Carolina. I may also say, without the risk of invidiousness, that the senior editor of the JOURNAL has especially won the admiration of his professional brethren by his long, faithful and intelligent management of that publication, and for the conspicuous service he has rendered in elevating in the esteem of outsiders the character of his profession in the State. His labors for several years past have been lightened and rendered more efficient, if possible, by the brilliant work of an associate, who, by the law of heredity, as well as by education, has a just claim to the title of DOCTOR OF MEDICINE. It was in the sister town of Edenton, in 1857, that Dr. Edward Warren penned the material which entered into the first number of the NORTH

CAROLINA MEDICAL JOURNAL, building castles in the air which we now live in with so much complacency that some of us cannot even remember when they were the gauzy fabrication of a zealous young dreamer. The faith which has led us up to the realization of these dreams is of that quiet kind which in our State has been fruitful of good works, and which is developing and broadening our profession as a scientific body, and which, by and through its auxiliaries, is shedding its beneficent influence deep down into the social fabric of our State.

It is expected of your presiding officer that he shall make his address of the nature of a message of suggestions, and in order to do this he begs the indulgence of the Society, for repetitions are almost unavoidable. The past year has been one of great activity in the medical world. Our literature has been so crowded with material of all kinds and sorts, some pseudo-science, some re-hashes, some ephemeral wonders, that it has brought into existence a corps of crystallizers, who systematically labor to bring out of this great mass precious and useful things, the finished product of which cost the labors of many scores of brains, so that we have now upon our shelves assimilable pabulum, in such great store-houses as the "Reference Hand-Book" and "Sajou's Annual," which are at the same time exponents of progress and guides of future study.

In our own State we cannot yet boast of original studies, of great medical colleges and biological laboratories, or of luxurious hospitals, but of patient work in laying a deep and broad foundation for the future of our profession. This Society has expressed itself, most emphatically, as being opposed to unendowed medical colleges, and upon this principle we should stand firmly, and thus carry out the spirit which animates our Board of Medical Examiners.

The committee appointed to procure amendments to the law regulating the practice of medicine deserve special consideration at our hands for the wisdom they have shown in framing the law and in their patient presentation of the matter to the General Assembly, thus enabling us to enjoy the privileges of a law which must be the ideal of many a State in this union for years to come. We should feel especial gratification that all these could only emanate from a united and progressive profession.

One of the events of the year which is full of hopeful significance for the future of public sanitation is the meeting, in Raleigh, last February, of a representative body of gentlemen, delegates from our beloved University and the other colleges of the State, nearly every town or city, of considerable population in the State, and many of the learned professions—law, medicine, chemistry and engineering, indicating that the study of hygienics has passed beyond the bounds of the medical profession and has become, at last, a *public* question; indeed, one of the leading social questions of the day. It must be gratifying to the State Board of Health to witness this advance in the study of public health, as evidenced in the formation of a Sanitary Association and in the subjects discussed in the first issue of the proceedings of that Association. The struggle in our State has been a hard one, and we cannot claim to have gone far beyond the fundamental groundwork, but with the *foundation* well laid the future is assured.

The State Board of Health endeavored, endeavored, during the session of the last General Assembly, to obtain a uniform registration of births, deaths and marriages. It was deemed impracticable to secure such registration in the sparsely settled country districts, and a law was framed asking that every town of 500 inhabitants, according to the census of 1880, should organize a compulsory system of registration, attaching a small fee to the service of the clerk of the court.

The scourge of yellow fever, which visited the South during 1888, caused widespread terror and damage to trade. Its announcement was characterized by a panic, which was heightened by the fact that Florida had no State health organization and because the first cases of fever were suppressed or covered up. We all remember the peculiar hospitality of the town of Hendersonville, North Carolina, that opened her gates to receive refugees from the stricken district, and how that, owing to the salubrity of her climate, no new cases of fever occurred after they arrived, and of those stricken none died. The State Board of Health furnished all aid in its power, but wisely concluded not to allow any more refugees to enter the State unless they could be placed in a guarded camp. This conclusion was settled upon by reason of several having escaped from that town—refugees, who had lately arrived there.

Some of the features of the revised license law require that any person now practicing medicine or surgery in the State shall register before the 1st day of July, 1890, in the office of the Clerk of the Superior Court of the county where he resides, and all who shall practice after the passage of this act, shall register within thirty days after obtaining a license from the Board of Medical Examiners. Any person applying for registration shall exhibit his license or a diploma issued by a regular medical college prior to the 7th day of March, 1885, or make oath that he was practicing medicine or surgery in this State prior to that time; then he may be registered. Any person who shall practice, or attempt to practice, without first having registered, shall be guilty of a misdemeanor, and, upon conviction, shall be fined not less than $25 nor more than $100, or be imprisoned, at the discretion of the court, for each and every offence. The law also makes it the duty of this Society to prescribe a proper form of certificates required on or before the 1st of July, 1889, to furnish the Clerk of the Superior Court of each county in the State blank forms thereof, and also one or more copies of this act, and each Clerk of the Superior Court shall post a copy of it in some conspicuous place in the court house of the county. This Society is also obliged to furnish every physician in the State, whose address can be obtained, a copy of this act on or before the 1st day of July, 1889.

The practical application of the law will depend upon the fidelity of the officers entrusted with it, but it is sufficiently demonstrated by events of the past few years that the *people* are much interested in the proper preparation and authorization of physicians offering themselves for practice, as the profession itself, and that juries will be found in any and every county prepared to do their duty. The registration also enables the solicitor to know what individuals are practicing without authority, and he can indict any offender without waiting for men of the same profession with the offender to be the informers.

The NORTH CAROLINA MEDICAL JOURNAL, in an editorial in the March number, gives us a review of the sixth decennial revision of that important work, the Pharmacopœia. The Southern profession has had very little to do with Pharmacopœial work, and it behooves us to send a competent delegation to the next Convention, which will assemble in Washington City, D. C., in May, 1890. We have nothing but praise for the present committee of revision. They found the United States Pharmacopœia an obscure, insignificant volume, known to the medical and pharmacal profession by quotations from it in the dispensatories governed by a clique in Philadelphia, yielding no income, neglected and on the verge of rejection, and made it a standard of exact knowledge, sought after at home and abroad, and so much in demand in the book market as to have brought in an income to the committee of such considerable amount as to start their successors, well equipped, to make investigations for the improvement of the next revision. Furthermore, the committee has carefully prepared a "Digest of Criticisms," covering all the matter of pharmacy of 1880, from every source, thus placing in possession of their successors valuable information, which must put the United States Pharmacopœia abreast with the best *in any country*. The scientific spirit, which has pervaded their work, is worthy of the best place in American science. And it is to be hoped that it will be in the future lifted up above all narrow clique domination and keep its legitimate place in the world of science. So important is it that our Society be represented by members who have taken an interest in this work, that I recommend that a committee of three be appointed to represent us in that Convention, and that a sufficient sum be appropriated to pay their expenses.

There is one matter of some importance to which I wish to direct the attention of the Society, and which demands correction, viz: The great delay in publishing its proceedings. The fault in this matter does not rest with the Secretary entirely. Some of the authors of papers read before the Society are dilatory in furnishing their manuscript, and then a general lack of promptness in collecting and furnishing to the printer the copy. Without further specifications or criticisms, it is sufficient to say that the delay in publishing the proceedings is intolerable, and should be at once remedied. The proceedings of the last meeting of the Society were not published until a few weeks ago.

The law that was passed at the session of this Society in 1887, making it possible for a physician to become a member of this body by a written application, endorsed by two members in good standing, the applicant himself not being present, seems to have failed to effect the purpose for which it was enacted. The opportunity it afforded to physicians in the State, who were not disposed to come to our annual Convention, to become members of our organization and enjoy its privileges, has not been at all generally seized. The law was an experiment, and as it promised to enhance the work of the Society it was tried. There seems no reason for its further continuance. In fact, the movements of our Society from one section of the State to another, make ample provision for those medical gentlemen to join us in the usual and orthodox way, if they feel they cannot leave their fields of work long enough to follow up our sessions at points distant from their homes. I recommend that this law be repealed.

It would be well for this meeting to consider the question of refusing to accept the report of a chairman of a Section, when such a report is not made by the author in person. There may be imperative reasons why a physician cannot leave home, and a direct statement of the exigency that detains him will, of course, be accepted as a full excuse for the non-appearance of the author of a report in either of the Sections. But it is well that we insist that the paper written in answer to the appointment to this important work of the Society shall be read by the author, only be received for reference to the Committee on Publication in his absence, when a satisfactory reason is assigned for his absence. These both seem to me important matters and worthy of due consideration at your hands.

And now, gentlemen of the Society, permit me, in concluding these brief remarks, to renew the assurance which I gave in taking the gavel a year ago, viz: that I regard the honor of being President of the Medical Society of North Carolina as the highest I ever enjoyed, and that, therefore, I have most profoundly appreciated your kindness in elevating me to it. I beg, here again, to renew my thanks for the trust confided in me, and when I surrender the gavel to my worthy successor, whoever he may be, I would express the earnest hope that the future history of the Society may be an unblemished record of high and noble achievements, and that it may be universally regarded as a potent factor in the development of a high civilization among our people.

The presence on this occasion of fair women is an encouraging evidence of the fact that we have the sympathy of the better half of civilization, and on your behalf, gentlemen of the Society, I beg to tender them grateful acknowledgments for the presence which this gracious compliment to our profession affords us.

SELECTED PAPERS.

DYSENTERY.

By A. Jacobi, M.D., President of the New York Academy of Medicine, Clinical Professor of the Diseases of Children in the College of Physicians and Surgeons, New York, etc.

The sufferings from dysentery are so intense, and the dangers from its accute or chronic state, so threatening, that active measures must be taken at once. A brisk purgative ought to precede every other treatment. Castor oil in sufficient quantities, or calomel--according to age—in doses of from one to eight grains, will have a favorable effect, the latter acting both as a laxative and a disinfectant. The general rules of medicinal and hygienic treatment are those I laid down in my book on "The Intestinal Diseases of Infancy and Childhood" (G. S. Davis, Detroit, Michigan, 1887). It is these by which I shall be guided in most of the following remarks.

The food must be liquid. Milk and strained farinaceous decoctions must be the exclusive diet for the first acute stage. It is on the general condition of the patient that the administration of other articles of food, such as jellies, beef- or mutton-broth, egg or alcoholic and medicinal stimulants (either general or cardiac), will depend in the course of the disease.

Great sensitiveness of the left hypogastric region and local heat will be alleviated by the application of ice. Very young infants, however, bear ice but a short time, whether applied to head or abdomen. I advise to watch the effect of the application either of the ice-bladder or the ice-cold cloth. Now and then, even in adults, we meet with an idiosyncratic incompatibility with cold. That has to be taken into account. Indeed, quite often warm applications of either water or poultices prove more efficient in regard to the two indications, which consist in alleviating irritation and reducing temperature.

The subnitrate and the subcarbonate of bismuth do not only cover and protect the mucous membrane, but have also a decided antifermentative effect. Thus bismuth is surely indicated in irritated conditions of the mucous membrane; it seldom fails when given in different doses. There is no harm in sometimes giving it in such doses that part of the introduced material will pass through the entire length of the intestinal tract without undergoing decomposition. As its taste is not disagreeable, it may be given together with tannin and opium; the daily dose ought not to be less than one drachm or a drachm and a half (4.0 to 6.0). At the same time the passages ought to be examined as to their reaction. Abundant acid, so frequently found in the slightest intestinal anomalies, requires the additional administration of alkalies. In most cases carbonate of lime is preferable to either magnesium or the carbonate or bicarbonate of sodium, the salts of both of which are apt to increase diarrhœa. Sometimes, particularly when the stomach can be relied upon, the salicylate of sodium may be added to the internal treatment. Beside the favorable effect of the sodium in the intestinal tract, the salicylic acid may prove beneficial both by its antifebrile and disinfectant action. Salol, one or two grains, or resorcin, one-quarter or one-half of a grain, may take its place. The latter is better tolerated than the former, but salol has a better chance to reach the lower part of the intestine.

Opium and its alkaloids are invaluable in the treatment of intestinal ulcerations. The objections to their use are decidedly exaggerated. Such accidents as have been reported in the journals as resulting from the administration of opium must be attributed to the fact that the dose was either absolutely or relatively too large, compared with the idiosyncrasy of the patient. Dysentery both requires and tolerates larger doses of opium than an average diarrhœa, no matter whether the latter be the result of catarrh or ulceration of the small intestine or the cæcum, or the upper part of the colon. In this respect dysentery stands abreast almost with peritonitis. The main indications are to relieve pain, reduce peristalsis and diminish the copious serous secretion; no other remedy fulfils all of them so well. For this purpose it ought to be given internally; for enemata containing opium may act favorably, but the more intense the tenesmus and the greater the hyperæmia, or the more extensive the ulceration, the less reliance can be placed on its effect, and the amount of the opiate thus brought into real action cannot be estimated. Among all the opiates I prefer a tincture, or the wine, or opium in substance, Dover's powder; but rarely have I injected morphia under the skin. The effect of the drug is easily watched and controlled by commencing with moderate doses, not repeating them too often, and being guided by the effect obtained. If opium is to be discarded, opium with hyoscyamus, or with belladonna, or hyoscyamus or belladonna alone, may take its place temporarily. Severe tenesmus may require the painting of the protruding part with Magendie's solution.

Astringents may either be given in combination with opium or separately. They are expected to pass wholly or partly through the entire length of the intestinal canal, thus coming into contact with the inflamed and ulcerous mucous membrane. Among those eligible are tannin, gallic acid and vegetables containing the same (ratanhia, catechu), besides subacetate of lead, nitrate of silver and pernitrate of iron.

The daily dose of tannin, when it is to be taken for a long time in succession, is from ten to fifteen grains, subacetate of lead, five to ten grains, nitrate of silver one-fourth to one-half grain. The latter ought not to be given more than a week or two in succession, for fear of argyria, two cases of which occurred in my own practice, and of my own making, many years ago. All of these medicines are best taken, if possible, in the form of pills. They appear to be better tolerated, and are certainly more effective.

The use of keratin, when it becomes handier and cheaper, will facilitate their efficiency to a considerable extent.

Another ansiseptic which I have frequently administered internally in every description of intestinal ulcerations, in both acute and chronic form, is naphthalin. For its doses, and the methods of its administration, and some account of its effect on intestinal ulceration in general, I refer to the chapter on typhoid fever. We have to expect a great deal from such topical medication, and it appears that it will be one of the great refugees in all infectious diseases whose principal localization is in the intestine; as, for instance Asiatic cholera. With creolin I have no persónal experience as yet

Adults will take from fifteen to seventy-five grains daily, in powders, capsules or mucilage. Children bear, as a rule, according to their ages, from one-half of a grain to two or three grains, every two or three hours, in some mucilaginous substance. Some do not bear it well, but when such is the case the stomach will give warning at once.

The temperature will but rarely be so high as to require antipyretic medication. Frequent enemata will often reduce it effectively. Very young infants may demand an occasional dose of antipyrin or acetanilid (antifebrin) when the heat threatens either the nervous system or the normal structure of the tissues of the body.

Consecutive paralysis requires a mild galvanic current in the beginning. The daily application both to the spinal cord and the extremities need not exceed ten minutes; the electrodes must be large and the current reversed after five minutes. After a few weeks the interrupted current may be added the same length of time, but it must be applied to the paralyzed muscles only. Together with the latter, strychnia or (and) phosphorus may be used, in daily doses of one-thirtieth of a grain in the case of a child of four or five years.

The local treatment of chronic dysenteric ulcerations require the use of enemata. Their indications vary. They are to evacuate the bowels, or to reduce the irritability of the diseased intestine, or to accomplish an actual cure. These indications cannot be fulfilled separately; sometimes two, sometimes all three, can be at the same time. The nature and quantity and the temperature of the liquid to be injected depend, in part, on the end aimed at, in part on the irritability of the individual intestine. Sometimes the bowel objects to the introduction of small amounts; sometimes, however, large quantities are tolerated very easily indeed. To introduce small amounts, the selection of the syringe is a matter of indifference, provided the liquid enters the bowel gently and without pain. To inject large quantities, undue pressure and local irritation must be avoided. Thus the fountain syringe alone will answer; it ought to hang but a trifle above the level of the anus, say from six to twenty inches. The temperature of the liquid is not always a matter of great importance. Some recommend the injections to be ice-cold, some, however, tepid; both are frequently recommended as panaceas. But the practitioner will soon ascertain that some bear and require the one, some the other, some, indeed, very hot ones.

In my experience, for the large majority of patients tepid injections answer best. Not rarely is the intestine in such a condition of irritation that even small quantities of a very cold fluid are expelled at once. And again, there are cases in which enormous amounts of either cold or warm water are readily received. To accomplish the purpose of evacuating the bowel, plain water will often suffice, but three-fourths of one per cent. solutions of salt in water will usually prove more acceptable. Additions of bitartrate of potassa, or castor oil, have proved so uncomfortable in my cases that I have discarded them long ago. However, when the secretion of mucus on the rectal and intestinal mucous membranes was very large, one or two per cent. solutions of bicarbonate of sodium answered very well indeed. For the purpose of clearing the intestines, either of fæces or the morbid products, a single enema is insufficient. It ought to be repeated several times daily. When much mucus is secreted and tenesmus intense, it may be applied after every evacuation. In many cases the substitution of flaxseed tea or mucilage of gum acacia will prove advantageous. I have had to continue them weeks for both their evacuating and alleviating effect. When, however, the latter alone is aimed at—that is, when tenesmus is to be relieved—small quantities will usually suffice. An ounce or two of thin mucilage, or starch-water, or flaxseed tea, with tincture of opium, or better, extract of opium, prove very comforting. Glycerin in water has been recommended for the same purpose. The former alone, or but slightly diluted, irritates, nay, cauterizes. It will require close judgment and individual experience to ascertain the degree of dilution, if it be used at all.

When a local curative effect is aimed at, injections of small quantities are sometimes insufficient. As the local lesions are often extensive, the amount to be injected must be pretty large. Almost always astringents are required. Sulphate of zinc, or alumina, subacetate of lead, nitrate of silver, tannin, chlorate of potassium, ergotin, salicylic and carbolic acids and creasote have been recommended. Of the more common astringents I prefer alumina or tannin in one per cent. solutions. Creasote answered well in solutions one-half of one per cent. Salicylic acid resulted more frequently in pain than in benefit. Carbolic acid, in solutions of one-half of one per cent., has proved very beneficial, but I have learned long ago to be very careful in regard to its administration because of its poisonous effects, particularly in very young patients.

Injections of nitrate of silver may prove very useful in cases not quite acute. Before the solutions of a quarter of one per cent., or of one or two per cent. are injected, the intestine ought to be washed out with warm water without salt. After the injection has been made it ought to be neutralized with a solution of chloride of sodium; it is still better to wash the anus and the portion of the rectum within easy reach with that solution before the medicinal injection be made. For even the mildest solutions, when acting on the sore sphincters, are liable to give rise to intense tenesmus when no such care has been taken.

When the ulcerations are but few, or in the lower portion of the bowels only, small quantities suffice. But extensive lesions require large injections, the patient being on his side, or in the knee-elbow position. In these cases the nozzle of the fountain syringe must be lengthened by attaching to it an elastic catheter, which is introduced as high up as possible, after the same plan that nutrient enemata are to be given. In a number of cases, both mild and severe, where neither the usual astringents nor nitrate of silver appeared to answer, I have been very successful these twenty years, when resorting to injections of subnitrate of bismuth. The drug is mixed with six or ten times its amount of water; of this mixture from one to three ounces (30.0 to 100.0) are injected into the bowel which has been washed out previously, twice or three times daily. The success was satisfactory, though a large portion of the injected mixture was soon expelled.

Suppositories containing the above substances may prove beneficial. But in order not to irritate they must be so soft as to melt readily. They may also contain some opium. But its admixture is not always sufficient to relieve the irritability of the rectum. Indeed, to accomplish this end opium must at least begin to liquefy and to be absorbed, and absorption cannot be relied upon except where a part, at least, of the mucous surface is in a fair state of integrity. When no suppository can be tolerated, and the administration of an opiate to the intestine is indicated, the painting with Magendie's solution, or the injection of a small quantity of olive oil with tincture of opium, may still be tried. The local application of cocaine relieves pain, but the drug is readily absorbed, and great caution must be used in its administration because of its poisonous effects.—*The Archives of Pediatrics.*

It is reported that much of the cod-liver oil of Russia is adulterated with liquid parafine, in some cases as much as fifty per cent.

PHYSIOLOGICAL ACTION OF QUININE AND CINCHONIDIA.

Than quinine there is, perhaps, no other drug of the pharmacopœia so much abused. It is the universal tonic, the most popular remedy, the fetish in extremity of every human ill. Those gentle old enthusiasts of "Ziemssen's Cyclopædia" record their experiences, and recommend its use in ninety-eight separate diseases, and I defy any other physician to say he has not used it in a hundred. The wonder would be if he had limited it to that. The laity, ever eaves dropping for the miraculous, have run off with the secret, and few subject themselves to the physicians who have not already dosed themselves with quinine. Liebermeister grew truculent in his defence of large doses in the reduction of the temperature in typhoid fever, ordering 45 grains in an hour, and averring that he had given this amount in single doses 10,000 times. Jürgensen had given even more, but Malliot had covered himself with glory by ordering over 180 grains in twenty-four hours. The German constitution sets itself seriously to the digestion of a handful of the drug, as it does to any other problem, and comes out phlegmatic and alive at the end.

But comprehensive students begin to doubt the advisability of these great doses in typhoid fever, since the fiery fountain thus submerged deep in the system inevitably rises again, while the progress of the disease is not curtailed in time or in its destructiveness. Other antiseptics, as antipyrin or antifebrin, reduce the temperature still more, but with these, as with quinine, the inevitabe conservation of energy decrees that the sudden arrest of force in one form is stored up or developed somewhere else. As thus, the fever arrested, the heart or the brain gives way, the force of disease being suddenly directed to some new object. Where is the aurist of large experience who has not a pitiful disorder of the ear, some one with large doses of quinine had cured an intermittent, but had forever disarranged the fine adjustment of those fairy organs which go to make up the sense of hearing?

True it is, as Liebermeister suggests, that a Damascus blade may become only a bludgeon in the hand of a bungler. But I leave out of consideration those ill-timed and ill-advised dosings of the laity, with their tonic tipples, their morning pills for fancied malarias, with the consequent skin affections, nervous debilities, and the renewed need of resorting again and again to the promoter of the mischief, and I come at once to the masters of the Damascus blade.

I have had reason upon another occasion to call attention to the fallacious argument that experiments upon brutes indicate the action of medicines on man. Recently I observed a goat eating toxicodendron with a relish that was not abated when he approached the same plants on the next day. Guinea-pigs, monkeys and birds are comparatively insusceptible to the action of strychnine, and the cat survives whether the drug be administered by the mouth, veins or subcutaneously. It is presumable that opium is decomposed in the stomach of birds and herbivorous animals, as excessive doses produce no adequate effect. Birds are nourished by the berries of the kalmia, but men are poisoned who eat the birds. And so, I might extend the list, but the action of many drugs is simultaneous and alike in animals and in men. Quinine is one of these. In small doses, given to either, it acts as a stimulant to the nervous system, and in frequently repeated doses given to animals it increases the pulse-rate even until death (Stillé). In man the pulse-rate falls, under the effect of large doses, whether in health or disease, and its force is diminished, while the temperature may or may not fall, as I have noticed, even when doses of twenty-five grains have been given. In fact, there is no uniformity in the matter, the temperature falling in one individual under as similar conditions as may be, where it had remained stationery in another, or under the stimulus of fever had ascended. But, as a rule, large doses do lessen the temperature.

Sphygmographic experiments upon an exposed human brain prove that 5-grain doses increase the energy of the cardiac systole. More blood is admitted to the brain, but the intra-cranial pressure is lessened. After a dose of 20 grains there was diminished energy of the cardiac contractions, unfilled cerebral arteries and great diminution in intra-cranial pressure. (Putnam-Jacobi.)

The ordinary effects of full doses of quinine are of daily observation—buzzing of the ears, hebetude of mind, vertigo, unsteadiness of gait. But if the dose be increased to 30 grains, to these symptoms must be added great depression, apathy, somnolence, impaired sight and hearing, dilatation of the pupils and trembling of the limbs. Poisonous doses, and the amount of these must be determined by individual idiosyncrasy, poisonous doses, especially when injected into the veins, produce rapid death, and yet the heart has been known to continue to beat after respiration had ceased. And what is odd, and a point never to be lost sight of, an individual, who has at different times, in a series of years, taken full doses of 20 grains with benefit, may, after a lapse of time in which the drug has not been exhibited, succumb to very ordinary amounts, with alarming lethal symptoms. Nor is the effect confined to quinine alone. The sulphate of cinchonidia, which is generally supposed to produce analogous curative effects with quinine, but with less disturbance to the nervous system, will also become as treacherous under certain unknown conditions, and in small doses produce the same frightful effects. Given in poisonous doses to the lower animals, it produces intense congestion of the anterior portion of the cerebral hemispheres. (Bockius.)

From witnessing the distressing symptoms incident to the treatment of fever, with quinine, I gradually discontinued using that drug, and for twelve years I have confined myself instead almost exclusively to the sulphate of cinchonidia. Noting its efficiency and its milder effect, I have frequently congratulated myself upon its substitution, and have recommended it to my professional confrerés, whenever occasion presented. It rarely caused tension and pulsation in the head, torpor or impairment of hearing or vision, even in doses of 30 grains, which I have given in typhoid fever, until observation and analysis have taught me better. In doses of 15 to 20 grains it has been effectual as a curative of periodical fevers and in neuralgia. Doses of 10 grains have not infrequently cured headaches in a few hours. As a tonic, in doses of 2 grains thrice daily, I have observed the happiest effects. But, as with quinine, the prrctitioner must exercise due vigilance in administering the drug, and even then, with small doses, he may meet with a genuine surprise in its physiological effects.

On September 1, 1887, I ordered eighteen in doses of 6 grains, once in two hours, to be taken by Mrs. V., who, while under treatment for lithæmia, complained of material symptoms on alternate days. She had taken the second dose at 10 a. m. At 11 o'clock, while going from one room to another upstairs, she suddenly sank down powerless, and was gotten to bed by her attendants in a sad fright. Her heart at first beat rapidly, then became very regular and slow, the skin cool, the breathing labored, but the mind was inordinately calm and collected. In whispers she conversed with her family and quieted their alarm, though suspecting herself that dissolution might occur. It was nearly noon when I reached her. The face was then highly florid, the eyes injected, the pupils staring, the pulse 50, the temperature, as nearly as I can recall, having lost the record, was 98°. The heart's action was very weak, and the patient lay motionless, whispering in a soft, clear tone and without exhibiting any anxiety, though a prey to it, as she confessed. The 1-120 of a grain of sulphate of atropia was injected hypodermically, and the heart growing stronger under its influence, it was repeated in twenty minutes with good effect, and afterwards given by the mouth, together with brandy and lavender, hot bottles being used at the feet and sides. The effect of the drug slowly declined, and on the next day there was nothing unusual to be perceived.

When I called in the afternoon Mrs. V. informed me that she had passed through a similar crisis about three years before, while under the care of the late Dr. Shackleton, who had ordered her 20 grains of quinine. The symptoms came on when she had taken but 5 grains, and she recovered more slowly than from the cinchonia.

In my own person I have frequently taken large doses of the latter drug, for the relief of neuralgia of the fifth nerve, with complete success, and without incident. These large doses, twenty to twenty-five grains, have been usually taken on retiring for the night. In four hours the pain, which had been gradually decreasing, ceased. When under the influence of the drug, I have been delighted to observe how clear all the mental processes have become. It has had upon me much the same influence Coleridge and De Quincy have attributed to opium. In carrying out a train of thought, I have been no longer tantalized by the many avenues which ordinarily open away from the direct line of march. I have gone straight to the purpose, though with a feeling of isolation, as if I sat in the midst of a silence ringed round with murmurs similar to that experienced when hollow winds are heard blowing with a distant sound in the night. As long as this full influence of the cinchonidia continued my mind set itself clearly to the solution of problems, without haste and without fatigue. But after a time a cool bitterness came in the mouth, the air seemed purer as I breathed, a slight numbness was felt in the fingers, some itching of the flesh, the sense of isolation wore off and life came back, as before, the mind turning its attention on all sides.

I had not taken cinchonidia for six months, when in August, I began to suffer severe pain in my left eye, which, growing intolerable, and attributing it to some defect of the organ, I consulted Dr. Webster, of New York, who found the defect in the right eye, which, focusing out of tune, as it were, left the burden, but not the melody of harmony, to the left eye; but he advised, in addition to the glasses ordered, that I should try the effect of quinine. Accordingly, the very next morning (August 28), as I still suffered severely, I took 15 grains of the cinchonidia on sitting down to breakfast. I happened to have only that amount available, or I should have taken more. I had a number of calls to make, and began my rounds at 8 a. m. At 10 a. m., while being driven along a country road three miles from home, I was suddenly attacked with severe pain, with a sense of oppression similar to choking, in the præcordial region, which continued for about twenty minutes. I now alighted at a house, where, having an operation to perform, I lost sight of my own symptoms, but in a changed form they met me at the door as I came out. My hands and feet began to burn and tingle, and an uncontrollable itching of the arms came on, which seemed conspicuous to my driver. I now called to see a lady who was suffering with urticaria, and, to my mortification, being unable at times to prevent myself from rubbing my arms, I invented a pleasant story that the sight of her distress caused a sympathetic irritation in my own blood, but she did not appear to relish the conceit. As I was driven back to town my hands and feet began to swell, as did my face, while the itching was transferred to my hands, which had turned a mottled purple.

The morning, fortunately, was cool, and I felt better by the time I had reached my next stopping place, which was again in town. Here I found a patient convalescing from a tedious nervous disease, sitting on the piazza, and turning a right longing look at my horse and phæton, when I remarked, as I rose to go, that I was now about to pay a visit at a house a mile from town, on the shore of the bay. Whereupon I dismissed my driver and took the invalid. As I drove along I began to have the horrible impression that I was going to be very ill. I had singular visions of yellow leaves on an orchard we were passing, with yellow apples, and a yellow Dutchman, in a yellow shirt, gathering beans from yellow vines. My mind was getting apathetic, too, and I was answering my friend at random as she went plaintively over the routine of her endless symptoms. Reaching the longed-for house, I got out of my phæton with the careful regard of a centenarian, my knees bending weakly, my arms hanging down and my head lolling gently forward. I fumbled feebly at the door, which a stout lady opened and invited me in, ushering me, with voluble information as to the patient, into the sick room, where three or four solemn people had gathered. I staggered forward with the sickening sensation that they would think me intoxicated. I dropped down by the bedside on the first chair, with a sudden sense of powerlessness, asking for a glass of water, affirming that I had been taken suddenly ill, which, it occurred to me, no one was generous enough to believe.

With a supreme effort I heard the sick man's story, which, with severe austerity, I assisted him to abbreviate. Catching the salient points, as a man falling from a tower catches at the salient angles, I prescribed for him cleverly enough, as it turned out afterwards. I then tried to go, but found I could not rise. Unable any longer to talk, I dropped my head in my hand and sat still for a long minute. Then, spurning my human weakness, I clutched the table in front of me and slowly arose; it seemed in doing so that I rose slowly above my body, which hung back like lead. One of the solemn men followed me out and essayed to question me concerning the patient, but I regarded him sternly and tottered on. I got into my phæton by sitting down in the foot first, and then, with a weltering motion, as if in the sea, I got back upon the seat.

I asked the lady, with a hideous attempt at humor, if she would not see me home. I began to sigh and struggle for breath, and my heart appeared to be scarcely beating. I attempted to raise my arms, but could not. The wheels jolted into a rut; I swung a dead weight to the motion of the vehicle, and thought I should fall out. Noticing the terror in my companion's face, I attempted to reassure her, but it was only after repeated efforts that I could speak. She wanted to drive me to the door of a house we were passing and call the inmates. I protested in a hollow voice that I was better, and must get home, but at the same moment I was near falling out on the wheels. We went over a bridge and I noticed that a yellow stream was flowing beneath it. On the further side a girl came out of a cottage with a plate of the most nauseous-looking peaches I had ever seen. Struggling for breath, I yet singled out every eye, and saluted most respectfully even the most hardened reprobates. I found I could use my hands. I took the reins and drove into my grounds. With scant ceremony, I fear, I called the stable boy and bade him drive the lady home. Feeling my way by the walls, I got to a door on the back piazza, and finally reaching a couch in the office, I fell forward on it, the ceiling and the floor apparently heaving as in an earthquake. From this time I rapidly recovered under the use of stimulants, and only regretted that I had not been able to make a scientific record of my symptoms.

For ebout twelve hours there was a peculiar dryness and crackling sensation of the skin whenever I moved. It was as if an exceedingly fine wire was drawn about me and moved here and there with lightning rapidity, a stinging sensation accompanying the crackling.

On October 1st I prescribed 15 grains of the cinchonidia for the relief of fever in the case of Mrs. M., of Matawan, and I append a note received from her on the following day:

MATAWAN, October 2.

DEAR DR.:—I have had a fearful time with that medicine, and I write to ask whether I shall take any more of it, even in small doses.

I took it at 9 a. m., and at 11 e'clock I became powerless and couldn't raise my head till 3 in the afternoon. I was all alone. I sunk down on the floor and couldn't move. I thought I should die; I couldn't get my breath. I crawled to a front window at 2 p. m., and beat on it with my fist, but could not make any one hear. Was it the medicine? Let me hear from you.

Respectfully, MRS. M.

I called on the lady at once and found that she had passed through a terrible crisis, being all alone and with a clear mind noting her symptoms with doubt and anxiety.

Quinine and cinchonidia are put on the market adulterated, but the character of the well-known houses from which the drug in question was received precludes suspicion here. But the character of the affinities it meets with in certain conditions of the system are unknown—in fact, they are not known under any circumstances—but the sulphuric acid may leave the cinchona and begin a destructive course, only bounded by its limited amount. Boehem states that the smallest appreciable amount has produced poisonous symptoms of the gravest character, and even death.

But the experience detailed does not argue against the employment of the drug, except in unskilled hands. They only argue extreme carefulness, and suggest that in the malarious districts, where great doses are frequently given, its poisonous effects might be mistaken for pernicious intermittents, and a fatal end be produced by pushing the drug subcutaneously or otherwise.

Of the measures to be employed in extreme manifestations of its power, I believe brandy and atropia, in small amounts, are paramount.—*Medical Register.*

THE HEART AS A MUSCLE.

By the late J. Milner Fothergill, M.D., Corresponding Editor, London, England.

When a patient comes into hospital with dropsy of the extremities, with scanty urine, dense and charged with urates, puffing and panting for breath, unable to breathe in the recumbent posture, and exhibiting other evidences of cardiac failure, including a sense of fullness in the stomach when empty, and frequently eructating "heart-wind," it is usual and common to find disease present in the mitral valves. Rest in bed produces a marked effect, especially if it be accompanied by some digitalis and strychnia, or possibly some strophanthus, and sharp cathartics occasionally—say elaterium 1-10 of a grain and jalap 15 grains. One thing in this specially strikes the student and youthful practitioner, and that is, instead of being depressed by the sharp purgation (as would a person in good health), the patient feels greatly relieved by it. In a short time the œdema passes away, the breathing is relieved, the patient being able to lie down and enjoy a sound sleep. On examination, the heart is now found diminished in size, beating more equally and with greater vigor, giving an improved pulse. Now, what is the history of such a case? First and foremost, there is an injury done to the mitral valves, whether stenosis or insufficiency is immaterial to the present inquiry. This injury dates back a good many years.

During most of this time the patient has been following his usual employment and earning a living. The valve-lesion has been compensated by a hypertrophy of the muscular wall of the heart. To view the matter in its correct light, we must think of the primitive heart as a mere pulsatile, muscular sac. As evolution proceeds, valves are developed by which the blood-current is kept progressing and regurgitation prevented. When the obstruction to the blood-flow is increased, or regurgitation through a valve established, then a muscular increase more or less perfectly compensates the valvular deficiency. In other words, the heart is degraded toward the primitive muscular sac to the extent of the valve lesion. A small injury is readily compensated, and the compensation maintained for a long period. If the injury be a large one, it is not perfectly compensated, and such compensation as is established wears out in a comparatively short time.

To go back to the patient, who is rapidly losing the phenomena of a failing heart, we find no evidence of change for the worse in the valve-injury. It has remained static and unchanged. What, then, has occurred? The muscular wall of the heart has been weakened from some cause or other, and so the muscular compensation has failed for the time being. The patient has continued his employment until incapacity unfits him for it. On inquiry we shall find a patient with a temporary breakdown of the heart-muscle to give the following history: He had got his stomach out of order and his digestion had failed, or he had a long-standing diarrhœa or other exhausting discharge; if a woman, she has had uterine hemorrhages from a fibroid tumor, or an abortion, or perhaps simple hemorrhagia, or perhaps the patient has been out of work and unable to procure proper food. Whatever it may be, it involves failure in the muscular compensation of the valve-lesion. So long as the murmur is made the most important phenomenon in a heart case, so long the attention of the student is focused upon the wrong object. He is taught to think about the valve-injury, which has remained perfectly static, and thus his attention is drawn away from the failure of the muscular compensation. He is told dogmatically that "digitalis is good in mitral cases," instead of Rosenstein's happy way of putting it, "digitalis is indicated whenever it is desirable to pump the blood more effectually from the veins into the arteries," which will meet all cases, mitral, aortic, or muscular failure without valve-lesion, indiscriminately.

The object of the physician is to improve the condition of the heart-wall. The muscle is flabby and weak, and the first thing to be done is to give it rest, i. e., such physiological rest as its function permits. So, rest in bed is the first matter. The next is to attend to the nutrition, remembering that there is congestion of the whole portal circulation, and that the venules of the stomach are distended; hence the sense of fullness. The patient must have small quantities of some prepared "food" in well-boiled milk at short intervals. This may alternate with beef-tea, thickened with broken biscuit or bread-crumbs. Some food during the long hours of night is indicated; and when weakened by dyspnœa some food will often enable the patient to drop off readily—a great matter. By such means the nutrition of the body is kept up and the heart-muscle is fed. The third is medicinal and takes two directions:

(*a*) To improve the tone of the heart and to increase the vigor of its contraction, using any cardiac tonic; and

(*b*) To unload the venous congestion of the viscera by cathartics. So soon as the swollen liver is relieved, it can resume its work of the metabolism of albuminoids; after which full supplies of serum-albumen are furnished to the wasted muscular system, and the heart-wall regains its vigor.

This temporary breakdown of the muscular wall of the heart is common with vulvular lesions, and may occur again and again before it is due to fatty degeneration. When this occurs the breakdown is permanent, because this form of muscular failure does not admit of removal, except when due to a sustained pyrexia, as typhoid fever. (A weak condition of the heart, due to the effect of a sustained high temperature upon the muscular fibrillæ, is far from rare, and in some cases it is months before the heart recovers its normal condition and capacity. The matter of fatty degeneration of the heart-wall will be considered in the next section.) In cases where the lesion is a small one, the breakdown does not occur until old age is reached. One such case of mitral regurgitation has been under my own eye more than twenty years. The man was middle-aged when he had his heart injured by rheumatic fever; six years later he came under my care with hæmoptysis and severe lung-congestion.

He seemed as if the course of the case was going to be a short one, when, fortunately for him, his means improved, he no longer had to toil, with the consequence that he is a hale old man, albeit scant of breath on exertion, and has never required the services of a medical man since he was under my care.

In the huge heart of aortic insufficiency the muscular compensation is worn out more rapidly than with other forms of valvulitis.

But temporary failure of the heart as a muscle may occur quite independent of any valvular injury. Sometimes it is the result of two short hours of sleep, possibly from insomnia. Such cases have frequently been mistaken for fatty degeneration of the heart, even by physicians of note, and much unnecessary misery caused.

In one case a large heart gave way under two severe attacks of *angina pectoris vasomotoria* (Eulenberg), and the condition of dilatation has remained, slightly improved only, after three years. The most profound cases which have come under my personal notice have been produced by prolonged nursing. Two of these were stalwart, robust women in the prime of life. One nursed a family of children, one after the other, with scarlatina. The other nursed her husband day and night through a long illness. A third was an elderly woman, who also nursed her husband unremittingly for three weeks. In all these cases there was dropsy and the other phenomena of the failing heart. The one who nursed the children was only seen by me once in consultation, and I have been given to understand she ultimately died, but how, or of what, I know not. The second was confined to bed for some months, but recovered, and when by me all evidences of cardiac weakness had disappeared, except a little œdema of the ankles at night, the woman presenting the appearance of a robust person in excellent health. The third had a sharp attack of dropsy, soon got quite well, and worked as a field-hand for years afterward.

But such an advanced condition of uncomplicated muscular breakdown is comparatively rare, the usual cardiac debility being less serious. Over-exertion is a common cause of debility of the heart-wall, usually combined with dilatation. Dr. Da Costa observed the condition of "irritable heart" to be very common in the Civil War of North and South in the "sixties." Want of sufficient rest, mental excitement and prolonged physical exertion brought about a condition of rapid action of the heart, marked increase in the pulse-rate on getting up from the recumbent posture, and incapacity for active effort. Such condition required a considerable length of time for its relief. In my personal experience such a condition has been seen most commonly among medical men. A man of active sympathies, in large practice, has his rest broken by a number of obstetric cases keeping him out of bed, or a series of anxious cases involving his being frequently called up at night. This new burden tells upon a man who was already overworked, and a breakdown of the heart compels him to seek that rest which he has so far denied himself.

One such case is that of a professional nurse who has repeatedly been under my professional care with cardiac adynamy. Sometimes there is actual dilatation, at other times no obvious change of form. As years roll on, probably this heart will give way under some great effort, as lifting a patient, and come to a stand-still in diastole.

Such cardiac breakdown is most commonly seen in persons of the neurosal diathesis—spare and earnest persons—but is not necessarily confined to persons of this temperament. It may be looked for where severe and prolonged exertion is combined with insufficient sleep, and constitutes one of the risks of self-denial connected with the nursing of the sick.—*Universal Medical Sciences.*

THE CLIMATE OF THE NORTH CAROLINA ALLEGHANIES AND THE DEATH-RATE FROM CONSUMPTION IN SOUTHERN CALIFORNIA. --The NORTH CAROLINA MEDICAL JOURNAL, for January, contains a very interesting paper by Henry O. Marcy, A.M., M.D., LL.D., on the climate of the Alleghany Mountains in Western North Carolina. Our own impression is that he describes the best country for invalids, to be found east of the Rocky Mountains. He presents two tables: the first shows percentage of deaths from consumption, in which Los Angeles county ranks high. If Dr. Marcy had ever been to Southern California he would see the necessity of following this table with an explanation. The great number of consumptives—many in the last stages of the disease—who come to this section give us an abnormal death-rate from this disease. The second table shows the deaths from pneumonia, in which Los Angeles county has next to the lowest rate.—*Southern California Practitioner*, Feb., '89.

EDITORIAL.

THE NORTH CAROLINA MEDICAL JOURNAL.

A MONTHLY JOURNAL OF MEDICINE AND SURGERY, PUBLISHED IN WILMINGTON, N. C.

Thomas F. Wood, M. D., Wilmington, N. C., } Editors.
Geo. Gillett Thomas, M. D., " }

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MEETING OF THE MEDICAL SOCIETY AT ELIZABETH CITY—THIRTY-SIXTH ANNUAL MEETING.

The few times the Medical Society has met in April, it has proved to have been an unfavorable period, singularly so was this meeting. Just at the time of meeting a rain-storm of great violence and extent visited Eastern Carolina, interrupting travel, casting a gloom over the regions visited, and interfering seriously with the work of the Society and its auxiliaries—the Board of Medical Examiners and the State Board of Health. The Board of Examiners met on the Friday preceding the 16th of April, and there was but one member absent, but he arrived at a later date, and in time to take his part in the work of the Board. Of the Board of Health only Dr. J. W. Jones, the President, and the Secretary, were fortunate enough to reach Elizabeth City before the interruption of travel.

It has already been noticed that the President of the Society, Dr. Ennett, met with a serious accident, with which he has been confined to his bed ever since. The duty of presiding fell successively upon Dr. G. W. Long, 2d Vice President, and Dr. W. J. Jones, 1st Vice President, who arrived later. The policy of President Ennett's administration was not disturbed by his absence, he having had the forethought to send his address to be read, and in it was outlined his digest of the needs of the Society for the coming year.

The literary value of the work presented will not compare favorably with last year, owing to absences and to the lack of vigor in the management of the sections. We here suggest that hereafter no member should be chosen a chairman of a section who does not give his personal pledge that nothing but sickness will deter him from preparing himself. It is high time that empty compliments should cease in our Society. There are men who will work and give literary character to our transactions, upon them bestow the honors.

The results of the enormous work of the Board of Examiners has already been given in figures, but this does not adequately convey the idea of the great strain upon them. Sixty candidates applied, and forty-seven were successful. The examinations were rigid and impartial, and have advanced the standard of proficiency to such a respectable degree that the successful men may well be proud of their license. It only takes a casual glance at the Class to see that the oncoming generation of physicians is better equipped than the passing one, and that their personal deportment is such as to betoken sound morals. The work of the Board of Examiners is the most substantial practical effort made towards the advancement of education in the State. It compels industry and acquisition of learning which must begin far back in the preparatory school.

The Board of Health elected two members to fill the expired terms of two others, and the drift, of which this election was the sign, is that the young blood of the Society is coming to the front.

This is all the more gratifying, because it is largely the movement of the senior members of the Society. It was thus demonstrated that the elder members are in earnest about promoting a healthy line of succession.

It is now apparent to all that the Medical Society of North Carolina is no longer a mere Society of physicians who meet for recreation, the interchange of thought and the promotion of their literary reputation, but is a great auxiliary of the State machinery, deriving its authority from the State, and using it as a sacred trust, to the end that the people shall have better educated doctors, and that the people may have an organized and developing corps of sanitarians to serve them by promoting the public health. Formerly this Society has offered invitations and attractions to physicians in different parts of the State to unite their efforts with ours, and at a personal sacrifice to the largest number they have kept up a good-natured itinerancy; the time has come when the objects we so dearly labored to attain have been embodied in the laws of our State, and the mandate goes forth now: You must comply with our standard or you cannot legally pursue your calling. It is no longer necessary now to go out of reach of the trunk lines of travel, but the Society should seriously consider the propriety of meeting at two or three large towns easily accessible to all, where hotel accommodations could be had of a good sort, and at something like a fair price. Before accepting an invitation to meet in any given town assurances in writing ought to be obtained of the ability to accommodate three hundred men comfortably, and that a concession as to rates is guaranteed. Hotel life is the necessary condition now for the week of our meetings, private entertainment being too great a tax on the entertainers, consuming valuable time in social intercourse which no working member can afford to give.

The pleasure of the reunions this year went a great way toward mitigating some of the disagreeable things. A large number of the "Old Line" was there, showing that bad weather and great difficulties could not lessen their ardor for the cause. It was very much to be regretted that the orator, Dr. R. L. Payne, Jr., and about fifty other members, were detained in Edenton and Norfolk on account of the break in the road. Several members of the Board of Health, Drs. Bahnson and Lewis, and Mr. Ludlow, came just in time to learn that the Society had adjourned and we were all packing to return home. In addition to this, our friends Drs. Michael, Coskery and Rohé, of Baltimore, after a tempestuous voyage on the Chesapeake Bay, came in just in time to take the return train.

DR. LEWIS' ADDRESS ON THE HIGHER MEDICAL EDUCATION BEFORE THE ALUMNI OF THE UNIVERSITY OF MARYLAND.

Baltimore, of all cities in the Union (we don't even like to except Louisville, although we might be safer to do so), needs to be informed about the demands of the medical profession, for a higher education than the majority of medical graduates from the colleges of that city are getting. We were disappointed to notice that our valued contemporary, the *Maryland Medical Journal*, had so little to say on the subject of Dr. Lewis' address, when to us it appeared to be such a golden opportunity for a journal avowedly in accord with such a movement.

Dr. Lewis spoke by authority, and with a full knowledge of the subject, being an alumnus of the University of Maryland, and a member of the North Carolina Board of Examiners for several years. He had thoroughly mastered his subject, by experience both as a student and an officer of his State, chosen to carry on pioneer work in medical education. Was the subject a disappointment to the Baltimore faculty, or are we to draw our conclusions and say that the medical colleges of Baltimore represent too much capital to venture to speak of reform through the columns of their accredited medium? We know, personally, that there are many physicians not connected with the medical schools in Baltimore who will look upon Dr. Lewis' address as a timely topic thoroughly well discussed, and long for the day when the reform can commence, as commence it must. Can any one fail to see that the city which has the proud distinction of having the Johns Hopkins University and Hospital in its midst, will some day be compelled by the new standard of learning to see that all of her schools of medicine shall have a thorough course? How much more creditable would it be to set it on foot now? How much more creditable would it be for the colleges to be enabled to point with pride to the educational impress they had made upon its graduates, and be the recipients of reflected honors, rather than to find themselves compelled by the overwhelming voice of the profession to adopt reforms?

We have no doubt that the address will be read with interest, and will carry great weight with it. It was eminently fit that such a paper should emanate from North Carolina, the pioneer of the reform, and that it should come from one who, as Medical Examiner and Committeeman to the Legislature, has done so much to bring our standard to a point far in advance of any State in the Union.

DROPPING NAMES FROM THE ROLL OF MEMBERSHIP FOR NON-PAYMENT OF DUES.

We desire to write a word of advice to members of the Medical Society about neglect of payment of dues, for we are confident that several gentlemen have allowed their membership to lapse without any wilful intention of severing their connection with the Society. The Treasurer has his instructions to revise the list of membership on the basis of his accounts, and he is not allowed discretion. Although not authorized by the Treasurer to say anything, we are confident that he will be pleased at any efforts to stir up the delinquent membership and save him from the disagreeable duty of dropping names.

Over a hundred members, we are informed, were dropped last year, and a like number, probably, will meet the same fate this year. We trust that our readers will look into their accounts with the Treasurer and see how they stand.

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The Only Bound Volume of Our Transactions.—The only volume of our Society's Transactions was lent to some member who has not returned it. As soon as this notice catches his eye will he be sure to return it, by express or registered package, to Dr. George G. Thomas, in care of the Journal?

REVIEWS AND BOOK NOTICES.

Cyclopædia of the Diseases of Children, Medical and Surgical. Edited by John M. Keating, M.D. Vol. I. Illustrated. J. B. Lippincott & Co., 1889. Pp. 992.

This volume is one of four which go to make up the long-promised Cyclopœdia of the Diseases of Children, a venture which is a novelty in the literary world of medicine. To begin with, it is as handsome a piece of book-making as we have seen for many a day, enticing the reader at once, in spite of the feeling that "of the making of many books there is no end."

The Anatomy of the Child, illustrated by many figures, most of them being photographic reproductions from frozen sections, having the merit of being original, and possessing some special teaching qualities, opens the work.

The chapter on Diagnosis, by Dr. James Finlayson, of Scotland, is instructive and well systematized. He evidently belongs to the same class of writers as Dr. Charles West, who come to their work as masters of style as well as of the subject matter they attempt to elucidate.

Dr. Byers' article on "The Influence of Race and Nationality upon Disease" deals rather too much in generalities to be of absorbing interest, but we must remember that of the country we desire to know most about—our native land—there are no adequate statistics. His belief that syphilis pursues "a milder course [among negroes], there is less damage to the system, and there are fewer lesions of any kind," does not agree with our experience with these people. Few of them apply to physicians for the initial sore, and the entailments of transmitted syphilis are manifested among their children in a variety of ways, largely conducive of the tremendous mortality rate among them. If further experience does not demonstrate this to Dr. Byers, we must believe he has a somewhat different class t' treat than those in our midst.

Why Outlines of Bacteriology need to be introduced into a work of this character, we do not see, but Dr. Shakspeare has condensed the subject into such a small space, and has given the very last facts, so that subscribers need not grumble. Maternal Impressions, by

W. C. Dabney, M.D., and Diseases of the Fœtus, by B. C. Hirst, M.D., bring us up to the real subject, which is an article by R. A. F. Penrose, M.D., on "The Care of the Child Immediately After Birth in Health and Disease," even this seems to us to be an encroachment upon the domain of obstetrical treatises. "Infant Feeding," "Wet Nurses," "Diet After Weaning," and "Nursing of Sick Children," are the topics which complete Part I.

With the exception of the article on "Joined Twins" and that on "Embryology," the second part of the volume is devoted to the consideration of fevers and miasmatic diseases. The articles on "Rheumatism," "Cerebro-Spinal Fever," and "Yellow Fever," seem to us to be written with most ability, and deserve special mention, while other articles, as the one on "Malaria," is of excellent quality. We see no good reason why the chapter on "The General Therapeutics of Children's Diseases" should have been placed at the last of the volume instead of its natural position with the article on "Diagnosis."

In perusing this large volume for the first time we have attempted to show some of the points which occurred to us, without attempting a thorough analysis. In conclusion, we can safely say that the good things are very good, and the superfluous ones, or those which do not relate particularly to the diseases of children, are the very best of their kind.

To the young practitioner a knowledge of the diseases of children is usually the greatest defect of his education, but a subject he must master at the earliest day. Possessing this Cyclopœdia, he will have all he needs, if the remaining volumes are as good as this one.

LECTURES ON NERVOUS DISEASES from the Standpoint of Cerebral Localization and the Later Methods Employed in the Diagnosis and Treatment of these Affections. By Ambrose L. Ranney, A.M., M.D. Philadelphia: F. A. Davis, 1888.

The author has brought his lectures together in a volume of quite a portly size, and with numerous illustrations. The first section treats of anatomical, physiological and pathological deductions respecting the nerve centres of man. Colored diagrams are here used profusely, the coloring serving the purpose of enabling the reader to distinguish more readily the different portions of the figures, giving to them certain teaching qualities which will be valued highly. These illustrations are from various authors, among them the most notable European teachers of diseases of the nervous system.

The second section contains practical hints regarding the clinical examination of patients afflicted with nervous diseases, and the various tests which may be employed as aids in diagnosis. About thirty pages are devoted to the symptoms of the nervous diseases as revealed by the examination of the eyes—a very necessary chapter of instruction—but one which few physicians will think themselves competent to master, however important it may be. There is no doubt that ignorance of the use of the ophthalmoscope has been a barrier to many physicians who have thrust upon them occasionally diseases of the nervous system. Then, *seriatim*, are considered the eyelids, the face, the hands, the gait, the attitude, as diagnostic signs. The spinal reflexes, tests for motor paralysis, the muscular sense, the principles of electro-diagnosis, electrical tests of the special senses, tests of tactile sensibility, the abnormality of the special senses, cerebral thermometry, conclude the second part.

The remainder of the volume is devoted to diseases of the brain and cords and their envelopes, toxic and unclassified nervous diseases, and the therapeutical use of electricity.

The glossary of neurological terms added is convenient and not embarrassed by loading with doubtful words. We have not had the opportunity, so far, to put the work to the test that gives us most assurance of its value, viz: as a consultation volume in time of need, but it has proved so attractive, thus far, that we doubt not it will stand the test of every-day practice. We like the whole plan and execution of the volume, and none more attractive has reached our book-table in a long time.

KIRKE'S HAND-BOOK OF PHYSIOLOGY. By W. Morrant Baker, F.R.C.S., and Vincent Dormer Harriss, M.D. Twelfth Edition. New York: William Wood & Co., 56 & 58 La Fayette Place, 1889.

This old favorite of students is still contending in the race with the newer text-books, and has enlarged its pages and amplified its chapters to make room for the great changes which have taken place in the science of physiology.

Not too large a space is given to the consideration of foods and diet, and there is everywhere evident great skill expended in crystallizing the text, keeping the volume within the limits of a handy text-book. The comparative physiology is especially instructive, and the chapter on "Development" is a good example of the best method of teaching this subject.

During a long history this work has been edited and revised by two generations of writers, and if it sometimes shows evidences of a gap in the succession of authorship, it comes to us as fresh and readable as a new book.

ELECTRICITY IN DISEASES OF WOMEN, with Special Reference to the Application of Stronger Currents. By G. Betton Massey, M.D. F. A. Davis, Philadelphia, 1889.

We have to present another of the excellent manuals on the use of electricity in diseases of women, although the field seems to be already well occupied. The author says he "has aimed to briefly present the laws of electricity, as applied to this branch of medicine and surgery, in so concrete and practical a shape that the conscientious student is insensibly made to comprehend current proportions as he would after prolonged mathematical study; the aim being to make the medical user of electricity as intelligently familiar with this physical force as is now required of so many practical workers in its industrial applications."

It is a neat and inexpensive volume, substantial and not too prolix.

DISEASES AND INJURIES OF THE EAR: Their Prevention and Cure. By Charles Henry Burnett, A.M., M.D. J. B. Lippincott & Co., Philadelphia. [Price $1.00.]

This volume of one of the series of "Practical Lessons in Nursing," and is written devoid of technicalities, to reach the popular ear. The author describes the organs of hearing in a very simple way, and warns his readers how to avoid treatment that would do them harm, rather than advising them to undertake treatment themselves. It abounds in practical, useful directions, which will be greatly appreciated by those for whom the work is designed.

WARNER'S THERAPEUTIC REFERENCE BOOK

Is a neat little volume, in flexible covers, of 119 pages, containing much that is convenient for a doctor to know at a glance. We have weights and measures in apothecaries weight and the metric equivalents; pathological tables; aid to memorizing doses; incompatibles; poisons and their antidotes; table to determine periods of gestation; table of the digestibility of foods; directions for making *post-mortem* examinations. To this is added—for it could hardly be otherwise—the long list of parvules and sugar-coated pills of a great variety of formulas, for Warner & Co. excel in this branch of pharmacy, and their fame in this line is world-wide.

WOOD'S MEDICAL AND SURGICAL MONOGRAPHS.

The numbers for April and May of these choice monographs comprise an essay by Jacques Mayer, M.D., "On Diabetes and Its Connection with Heart Disease;" one by Dr. Ernest Finger on "Blenorrhœa of the Sexual Organs and Its Complications"; one by Sir Henry Thompson "On the Preventive Treatment of Calculous Disease and the Use of Solvent Remedies"; and lastly, one by C. W. Mansell Maulin, M.A., M.D. "Sprains: Their Consequences and Treatment. We desire to say, especially as to the last article on "Sprains," that it is an unusually valuable contribution, and will repay careful study. The mastery of these minor injuries, as sprains are sometimes considered, is most difficult practice, but success in it redounds largely to the reputation of the surgeon.

These monographs are beautifully printed, and nothing, so far, has appeared in the series but the cream of scientific medicine of Europe and Great Britain.

LANOLIN is said to be a superior vehicle for antiseptics, exceeding glycerine and other fats for this purpose.

SALINE AND CHALYBEATE TONIC.—A leading communication in the *New York Medical Journal* gives a formula containing ten ingredients, representing the most important of the inorganic salts of the blood. Practically it may be a good prescription, but calls to mind one by another physiologist—Brown-Sequard—which contained a few less ingredients than Warburg's Tincture.

CORRESPONDENCE.

A CASE OF PLACENTA PREVIA.

Messrs. Editors North Carolina Medical Journal:

Dear Sirs:—On the 22d of April I was asked by Dr. H. S. Patrick to see, with him, an obstetric patient who had been losing blood very freely all day. The Doctor told me that he had great fears that it was a case of placenta previa, which subsequently proved to be true.

We saw the patient late in the evening, and found her very feeble from the loss of blood during the day, which had been great. At the request of the Doctor I made a vaginal examination, and found the os dilated about the size of a quarter of a dollar, and a thick roughened mass presenting, which I diagnosed to be placenta previa, and at each contraction of the uterus considerable hemorrhage resulted. We now felt that the crisis was upon us, and that something must be done quickly, or our patient would soon die from the loss of blood. We at once decided to tampon, packing the vagina full of cotton, leaving in for one hour and a half. On removing the tampon we found the os dilated to the size of a silver dollar.

We now decided on podalic version. Dr. Patrick gave the patient chloroform, and at his request I proceeded to deliver the woman. On introducing my hand into the vagina, I found I could introduce only two fingers into the uterus. I found the placenta centrally situated over the os and firmly attached all around the lower part of the uterus. After some little delay, I succeeded in dilating the womb and severing the placenta from the walls of the uterus sufficient to introduce my hand into the womb. I ruptured the membranes and caught the feet of the child, turned and delivered, the placenta immediately following. I introduced my hand a second time and to my astonishment found another child. I at once turned and delivered it and its placenta, there being two separate and distinct placentæ. Fearful hemorrhage resulted during the operation, but on emptying the womb of its contents it contracted very nicely, and the hemorrhage ceased to a minimum. The patient was very nearly exhausted at the close of the operation, but the timely administration of stimulants caused the patient to rally a few hours afterwards. The children were seven months children. One of them died half an hour after birth; the other child and mother, at my latest account, were doing well.

T. T. **Ferree**, M.D.

Brown Summit, N. C., April 25, 1889.

CURRENT LITERATURE.

MALARIAL PNEUMONIA.

Dr. F. Pignatari has recently described a form of pneumonia due to malaria, which differs from other known types of the disease in some important particulars, and requires special treatment. It occurs in marshy districts, usually in summer or early autumn (July to October), and in persons weakened by previous attacks of malaria. It sets in with shivering, sharp localized pain in the side, and high fever often accompanied by delirium. There is little or no cough till a late period in the attack, and hardly any expectoration; occasionally, however, the sputa may be blood-stained. Dyspnœa is not severe. The affection is, as a rule, confined to one lung, both sides being attacked with equal frequency. In cachectic individuals in whom the disease is accompanied by little or no pain, there is often more or less pleuritic effusion. The physical signs present no peculiarity; they are, however, not generally recognizable till the third or fourth day, and in some cases they are absent throughout. The distinctive clinical feature of the disease is the temperature, which reaches its highest point in the morning and its lowest in the evening; the limits of daily variation, however, are never more than 1° C. There is no direct relation between the degree of fever and the amount of local mischief. Resolution takes place in from seven to ten days, but after from twelve to twenty hours of apyrexia the temperature often runs up again, usually without any preliminary rigor, the fever subsiding once more in a day or two with profuse diaphoresis. Malarial pneumonia is, according to Dr. Pignatari, almost always fatal unless treated with quinine. His plan is to give from two to four half-gramme doses of antipyrin, one every hour in the afternoon, so that the 'apyretic effect of the drug may coincide with the natural evening fall of the temperature between 10 and 12 p. m. As soon as the perspiration caused by the antipyrin shows itself, he gives quinine in doses of from 15 to 20 centigrammes every two hours till from 80 to 120 grammes have been taken. By this method of administration the quinine is more readily absorbed than if exhibited during the height of the fever, and no inconvenience is caused to the patients, who sleep better in the daytime than at night. Expectorants are, in Dr. Pignatari's opinion, contraindicated, but he gives stimulants (Marsala or brandy, with aniseed or cinnamon water) in moderation. During convalescence he gives liquor arsenicalis, bark and quinine.—*British Medical Journal.*

ON THE CLINICAL SIGNIFICANCE OF COLORLESS OR CLAY-COLORED STOOLS UNACCOMPANIED BY JAUNDICE, AND THEIR CONNECTION WITH DISEASES OF THE PANCREAS; AND ON THE PART PLAYED BY THE PANCREAS IN ELIMINATING BILE FROM THE INTESTINES.

By Dr. T. J. Walker. (Read before the Royal Medical and Chirurgical Society, London, Eng.)

After referring to the accepted views of the significance of clay-colored stools, the author gave particulars of two cases in which, during life, a persistent symptom was the absence of color in the fæces, and in which the diagnosis made of obstruction of the pancreatic duct, with a healthy condition of the bile-duct, was confirmed by the necropsy. From these cases Dr. Walker concluded, first, that the formation of hydrobilirubin, the coloring matter of the fæces, depended on the mutual reaction of the bile and pancreatic fluid, under the influences met with in the intestinal tract; secondly, that in disease a deficiency of pancreatic fluid would, equally with a deficiency of bile, cause the pathological condition of colorless or clay-colored stools; thirdly, that since, according to the most recent physiologicel researches, that portion only of the colored constituents of the bile which had been converted into hydrobilirubin was excreted in the fæces, while the unchanged bilirubin, bilifuscin and biliverdin were absorbed, it followed that, if hydrobilirubin could not be produced without the aid of the pancreas, that organ must have an important rôle in regulating what proportion of the bile entering the intestines should be absorbed and what thrown off in the fæces. Dr. Walker then pointed out that these conclusions received confirmation from the records of other published cases, that Claude Bernard recognized that the pancreas had a part in causing the color of the fæces, and that the state in which the bile pigments were found in the meconium of the fœtus, while the pancreatic function was in abeyance, also accorded with these conclusions. He further pointed out that the fact of the pancreas influencing the excretion of the bile in the fæces would, if accepted, reconcile the discrepancy between the clinical observation that certain drugs produced copious bilious stools, and the physiological observation that these drugs had little or no influence on the secretion of bile by the liver, and that the same fact would explain those hitherto inexplicable cases in which, with no evidence of arrest of the bile-secreting functions of the liver, or of obstruction of its ducts, the symptom of white or clay-colored stools was persistently present. In conclusion, Dr. Walker indicated the practical importance of the views he had endeavored to establish in the treatment and diagnosis of pancreatic disease and of all forms of bilious disorder.

Dr. George Harley congratulated the author on the paper which had been read, and said that it was worthy of serious consideration There were some points which appeared to him doubtful. If the pancreas, by not acting in its normal manner, caused the fæces to be white, then we should not find such a large number of cases of white stools as occurred when the common duct above was blocked. The action of the pancreatic juice on oils had long been known. In the case of piebald stools, the explanation was that the first part of the fæcal mass was passed when the gall-duct was blocked; then the calculus became dislodged, and so the second part of the fæces became normal in color. In both cases the pancreas was acting. In meconium, if no pancreatic juice passed, the fæces should be pale, but he had never heard of white meconium unless there was congenital occlusion of the bile-duct. All these facts militated against the theory advanced in the paper. He had carefully searched for disease of the pancreas because the pancreatic and common bile-ducts opened so near one another that a stone which blocked one duct might easily occlude the other; further, he urged that if the pancreatic juice played such an important rôle we should not so often have clay-colored stools when the *post-mortem* examination revealed no disease of the pancreas. He asked what the condition of the urine was in these cases, and impressed on the Society the fact that occasionally cases of white bile were met with.

Dr. Thudichum complained that the paper was opposed to the facts of physiological chemistry. How could it be proved that the pancreas had physiologically any part in eliminating bile from the intestine? He denied that bile had ever been found in the fæces; in the dog only a small quantity of cholic acid had been found, for the bile disappeared entirely. Pale-colored fæces were met with after a dose of opium and in children who had just passed through an epileptic seizure. He traversed the point that "that portion only of the colored constituents of the bile which had been converted into hydrobilirubin was excreted in the fæces"; for hydrobilirubin was made from bilirubin in ox gallstones by dissolving them in caustic potash and then treating them with sodium amalgam. Now, human bile was a mixture of substances out of which no definite substance could be got. He was asked to believe that human bile contained bilirubin, bilifuscin and biliverdin, whereas it contained bilifuscin alone and nothing else. The statement that calomel produced bilious stools was worthless, for the green color was formed by a sulphide of suboxide of mercury. Blood never contained bile, or, at least, bile could never be detected in the blood.

Dr. Sinclair Thomson related two cases of gentlemen who had for twenty years been troubled by colorless stools; both had been in India; they had at times been under treatment for malaria, and he thought that malarial poison probably played some part in the production of clay-colored fæces.

Dr. Pye-Smith considered the paper of interest and value, which adverse criticism did not detract from. He advanced, in answer to Dr. Harley's objection, that while stools were present if the common duct above was occluded, that the color of the fæces depended on two factors and not on one; both the bile and pancreatic juice were necessary for the production of the normal color. He urged that there were cases of colorless stools which could not be accounted for; that the cause must be sought for by clinical and anatomical study. In cases of cancer of the head of the pancreas and of tumor pressing on the pancreatic duct, both ducts were often, from their proximity, affected. It was rare for the function of the pancreas to be disordered, and therefore he did not consider disease of the pancreas to be a frequent cause of white stool. Icterus simplex was not easy to explain, and he considered that the pathology of jaundice and the conditions of coloring matter on the stool were very obscure.

Mr. Keetley mentioned a case under his care of cancer of the head of the pancreas, in which the fæces were always clay-colored. The gall-bladder was greatly dilated, and cholecystotomy had been performed about a month before death. Jaundice was, however, present.

Dr. Walker, in reply, claimed that the Society had accepted his clinical facts, and that in the two cases which he had read there were clay-colored stools without jaundice, and that in both there was disease of the pancreas, and that there was no symptom of hepatic disease. He did not wish to break a lance with Dr. Thudichum on physiological chemistry, and declined to raise the question as to the origin of the coloring matter of the fæces. The point of his paper was to urge that two ingredients were necessary for the production of the normal color of the fæces, namely, bile and pancreatic juice, and that both must react, the one on the other, under the conditions found in the intestinal canal. He claimed that colorless stools were symptoms of pancreatic disease when there was no jaundice, for the absence of jaundice proved that the hepatic and common bile-ducts were patent. The urine was normal in both cases, and there was no evidence of excess of bile in the blood.—*British Medical Journal.*

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An outbreak of small-pox recently occurred in St. Joseph's Industrial School, Manchester, Eng., through a girl being admitted from York, while apparently in the incubative stage, and resulted in the infection of 67 inmates.—*Medical Science.*

THE TREATMENT OF RETENTION OF MEMBRANES OR PLACENTA.

Martini (*Münchener med. Wochenschrift*, Nos. 39 and 40, 1888) reports the results in 80 cases of retention of membranes or placenta, occurring in 2,960 births, or 2.7 per cent. of all. Analysis of these cases justifies the following conclusions: Retained membranes and placenta failed to influence puerperal temperature in 61 (76.3 per cent.) cases. In 18 cases (22.5 per cent.) it could not be positively asserted that retention did not influence temperature; in 5 cases fever was distinctly traceable to this source; it did not exceed 103.5° F., and was accompanied by foul lochia. The cause of the decomposition of the membranes and lochia was in 2 cases maceration of the fœtus, and in 2 others abortion. It was noticed that when the lochia became foul, puerperal ulcers also appeared; the cause of both phenomena was thought to be a common septic agent.

While the simple retention of membranes had little or no effect upon the puerperal period, maceration of the fœtus greatly increased the occurrence of fever. Fetid lochia were present in 31.3 per cent. of cases; hemorrhage in about the same proportion; in 18 per cent. it occurred sometime after delivery. Retained membranes and placenta had little influence on the involution of the uterus. Expulsion of membranes generally occurred on the third or fourth day, spontaneously. Eight cases were treated by intrauterine manipulation, 1 died from the entrance of air into the uterine veins; 4 had fever, 1 was afebrile; the result of interference was such that Martini does not advise it. He recommends non-interference, and expects the spontaneous expulsion of retained tissues in four days after labor. When the lochia decompose he advises vaginal douches of antiseptics. Ergot, antipyretics and baths are to be employed as the indications arise.--*Amer. Jour. Med. Sciences.*

Double Bag of Waters in Twin Pregnancy.—Auvard (*Archives de Tocologie*, No. 9, 1888) reports a case of twin pregnancy in which a double bag of waters presenting was a valuable diagnostic sign. He adds six similar cases in recent obstetric literature.

ANTIPYRIN IN NASAL HEMORRHAGES AND IN INTRA-NASAL DISEASE.

Them hemostatic properties of antipyrin reported by Hénocque, in 1884, have been recently reaffirmed (*Arch. de Lar.*, etc., April, 1888). He considers that the drug produces a constriction of the vessels and of the tissues at the same time that it produces coagulation of the blood. Among the practical hemostatic applications indicated are hemostases of the nasal structures. In epistaxis the antipyrin may be used in powder, in solution, incorporated into gauze, or in ointment. It may be insufflated, and then be covered with wadding or other dressing. During the course of operations in the nose the parts can be bathed with a 5 per cent. solution. Cotton wadding can be sterilized and then dipped into a concentrated solution and allowed to dry. Hénocque thinks there is antiseptic action in addition to the hemostatic, and perhaps even an action favorable to cicatrization.

Hinkel (*N. Y. Med. Jour.*, October 30, 1888) reports only questionable success from weak solutions of antipyrin in several cases of trifling bleeding following operations in the nose; but in later experience with a 4 per cent. solution found decided hemostatic effect, though not superior to that of cocaine. He finds that it possesses, to a certain extent, similar retractive effect on the turbinated tissue to that of cocaine. Sixteen grains to the ounce of water with a few minims of glycerine was as strong as could be readily borne, and was sufficient for the purpose. He noticed no blanching and no anæsthesia; but noted a sedative action utilizable in certain cases of sneezing, lachrymation, etc., in coryza and in hay fever. Antipyrin presented an advantage over cocaine in avoiding numbness and dryness of the parts and over-stimulation of the nervous system. It causes considerable smarting, and is unequal to the relief of severe inflammation or extreme occlusion of the nares. Combined with cocaine it increases the topical action of the latter, so that cocaine can be used in a weaker solution, say from one-half to one-fourth per cent. solution.—*Amer. Jour. Med. Sciences.*

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VIRCHOW regarded hemorrhage and embolism as accompaniments of the infective process.

REPORT OF A CASE OF ANEURYSM OF THE ASCENDING AORTA, INVOLVING THE INNOMINATE SECONDARILY, OPERATED UPON BY SIMULTANEOUS LIGATION OF THE COMMON CAROTID AND SUBCLAVIAN CURE.

By F. T. Meriwether, M.D., Surgeon Mission Hospital, Asheville, N. C. (Read before the Southern Surgical and Gynecological Association.)

October 24th, 1888—Found patient, Mrs. P., aged 37 years, married, multipara, last child about three years of age. No history of syphilis as far back as third generation. The patient's two aunts, two uncles and grandmother on her mother's side, had died suddenly from some heart lesion, but she did not know the exact trouble. Her father had died from acute tuberculosis. Patient had had a slight cough for sometime, and for the last few weeks had suffered from asthma at night. For past six or eight months had been much annoyed by a buzzing and humming in her right ear, and for past few weeks had noticed a stiffness and some tenderness in right cervical region. Had more or less pain in upper thorax for a year or more, but on Friday, October 19, 1888, upon walking up a steep hill, had felt something give way and was seized with a sharp pain in the chest, just over the third left costo-sternal articulation. Felt some shortness of breath, and after reaching home found that, upon moving around or getting up, she felt sick and heart palpitated. Having suffered from more or less palpitation of heart before, especially during her work (her occupation being to run a loom in a cotton mill), she paid but little attention to it, but it increasing and pain not subsiding, she sent for me. Upon inspection in dorsal position, a slight pulsation visible at root of neck, just above the sternum. Upon sitting the pulsation disappeared and could not be seen anywhere. Palpitation revealed a thrill and pulsation over upper portion of thorax, most distinct in second right costal interspace, but felt over a space of three and a half or four inches in diameter and transmitted a short distance along the subclavian and carotid upon right side. Percussion gave slight dullness over upper part of sternum over a space of two inches in diameter, and extending from about one inch below the superior extremity of the sternum. Slight tenderness over this space, but no softening; auscultation gave a well-marked aneurysmal bruit to be heard with the greatest distinctness in second right costal interspace close to sternum, but heard quite distinctly along the subclavian and carotids. Radial pulse not impaired, being apparently synchronous, some little laryngeal irritation. Pupil of right eye slightly contracted, and some little dimness of sight on that side. Drummond's sign of a systolic puffing upon stethoscopic auscultation over trachea proved of no value in this case. An apparent puffing was noted, but upon careful examination was found to be produced by the obscuring of the tracheal respiration by the loud bruit, thus giving an intermittency in respiration. It is possible, however, that in a large aneurysm, and in a different position, more or less stenosis of the trachea might be produced, and in that way give rise to an apparent puffing. Diagnosed aneurysm of the ascending portion of the aorta. Put her upon pot. iodide and tr. digitalis, the action of the heart being so tumultuous and irregular. Limited her diet and tried to follow Tiefnell's method. Upon October 28th sent her to Mission Hospital. Upon more careful auscultation a mitral regurgitant and aortic stenotic murmur was heard, the first being transmitted over area common to aortic stenosis, there being a slight doubt as to differentiation between this murmur and the transmitted aneurysmal bruit.

Upon October 29th she spat some blood, but it was probably from a laryngeal or tracheal irritation. Commenced to complain of pain in back, deafness in right ear, and slight pain and difficulty in swallowing. The pulsation now is quite apparent at root of the neck, and can be felt along the carotids and subclavian for some distance. The action of the heart is regular now, and she has suffered from no palpitation, but has had several attacks of asthma. The right pupil is contracted and the radial pulse upon the right side is getting a little weak and is a little later than the left. Unfortunately no sphymograph was convenient, and so exactness could not be obtained. Tracings would have been of interest in this case.

Upon November 2d, finding the aneurysm apparently growing, not at all affected by the iodide of potassium and dieting, I decided upon operation. By the way, I think many cases of cures by the iodide treatment are so many cases of mistaken diagnosis, many being reported as aneurysms the size of a walnut, pigeon's egg, etc. I imagine it would be very hard to diagnose such an aneurysm, it not being likely that one of such small size would produce symptoms directing the attention of the patient to the aorta.

At the time of operation there was a dullness over some 3½ inches of diameter not well marked except over sternum. The radial pulse was quite perceptibly affected and involvement of the innominate artery was probable. Upon November 3d I operated at Mission Hospital, in this city, assisted by the staff. Chloroform was given, but she took it so badly, failure of respiration repeatedly occurring, that I substituted ether. I intended to tie the common carotid just above the omo-hyoid, but it being placed higher in the neck than usual, I came upon the carotid nearly half an inch below where it crosses. The vessel was exposed by drawing the sterno-mastoid outward and the sterno-hyoid inwardly, thus exposing the artery nicely. The descendens noni was just upon the artery, but was held aside while the ligature was passed from within out. The internal jugular was not seen. Catgut was used to ligate. The subclavian was tied in the third portion just outside of the scalenus anticus. It was placed quite deep in its bed here and had to be raised some little distance before the ligature could be tied. The external jugular vein and a net-work of small veins crossed the middle of the incision, but by careful working none were cut. The jugular I dissected out and drew to the inner side of the incision. The brachial plexus was not seen nor was anything of importance except the artery. No blood was lost during the operation, the water hardly being discolored. The incisions were closed with very light catgut and iodoform and iodoform gauze used as a dressing. Antisepsis was strictly observed. Time of operation one hour and a half.

Patient rallied well from operation, but suffered great nausea during the night. At 8 a. m. on November 4th the patient was easy; no pain, but a slight heaviness in right arm, circulation good and well established, pulse in left arm a little increased, a distinct pulsation to be felt over abdominal aorta upon palpitation. Pulse 100; temperature normal. On November 5th some appetite and feeling comfortable. There was no rise of temperature during the entire period, and the pulse upon the third day went down to 80. Upon the fourth day after operation a small abscess formed at the root of the lower right canine tooth and ruptured, the tooth being decayed. Not a bad symptom appeared, no sign of aneurysm, the only thing complained of being a little weakness in the right arm. All the subjective symptoms present before the operation had disappeared. The dressing was taken off on November 13th, the tenth day, and everything found united. No sign of pus, the dressing not even being stained. The pulsation had diminished somewhat, and from this time on got less and less. The patient got out of bed upon the twelfth day, and left the hospital on the seventeenth day after the operation. I put her on a syrup of the hypophosphites and she gained strength daily. Upon the 27th of November, nineteen days after the operation, the pulsation could hardly be felt, and then only by deep and firm digital pressure upon the supra-sternal fossa. No thrill present upon the 30th day of November, the twenty-seventh day after the operation, no pulsation could be felt, but a slight systolic bruit could still be heard over the ascending aorta, being confused and lost in the aortic stenotic murmur. The abdominal pulsation had disappeared, and the only thing abnormal was a slight increase in the pulsation of the left carotid, there being a compensatory hypertrophy and dilation. Discharged as cured, with directions to report every month or two, or upon anything abnormal happening.

The statistics of this operation are in some confusion, owing to several divisions made by different writers upon this subject.* J. A. Wyeth, of New York, claims to be the second to operate upon aneurysm of the ascendtng aorta, this then being the third case of its kind, the first dying; Wyeth's, reported as a cure, dying in one year from diarrhœa, and my case, also a cure, being the second case. Gross, however, gives six cases, beginning with Bickersteth, in 1864, and ending with Palmer, in 1880, which, added to Wyeth's and the present case, make eight cases. For lack of time I have not collected statistics upon the operation, and will be thankful for any help in this direction which any member may give me.

This operation is practically in its infancy, the great mortality being done to delay in operation. So it has been with all operations, the results getting better as we operate earlier, it being, I think, a justifiable and practicable procedure. Very few patients are willing to go to bed for two or three years, conceding that the iodide of potash treatment is of service, and if taken in time hopes may be given of a cure, with but little risk, by this operation. It should not be undertaken by one faulty in his anatomy or in his surgery, and antisepsis must be thoroughly carried out.—*Atlanta Medical and Surgical Journal.*

MINUTES OF THE BOARD OF EXAMINERS—RULES FOR CONDUCTING EXAMINATIONS—LICENSE TO BE RESCINDED IN CERTAIN CASES.

ELIZABETH CITY, N. C., April 13, 1889.

The annual meeting of the Board of Medical Examiners of North Carolina was held in Elizabeth City, N. C., April 13th, 1889.

Present, Dr. William R. Wood, President and Examiner on Chemistry and Pharmacy; Dr. W. J. H. Bellamy, Secretary and Examiner on Materia Medica and Therapeutics; Dr. Francis Duffy, Examiner on Surgery, Surgical Pathology and Diseases of the Eye and Ear; Dr. P. L. Murphy, Examiner on Anatomy; Dr. James A. Reagan, Examiner on Physiology; Dr. Willis Alston, Examiner on Practice of Medicine. Absent, Dr. A. W. Knox.

The minutes of the last meeting, held in Fayetteville, were read and approved.

Dr. Knox being absent, Dr. Reagan was appointed in his place on the Committee on Rules Governing Written Examinations. The report of the Committee was taken up and the Rules were adopted, as follows:

RULE I.

In the examination of candidates, as many are to be examined at the same time as the circumstances will permit, making each Section as large as possible.

RULE II.

Two members of the Board shall be present with each Section during the examination, unless by consent one may be absent for a short time.

RULE III.

One of the Examiners present shall not be engaged in any business except supervising the examination at the time it is going on, to prevent irregularities.

RULE IV.

Each candidate shall sign a written pledge that he has neither given nor received any information concerning the examination, or used any unfair means; this pledge, with his real and assumed name, to be given to the Examiner in a sealed envelope; his paper to be signed by his assumed name. When the paper is finally passed upon the Secretary shall open the envelope and attach the pledge and the name to the paper, bearing the name found in the envelope.

RULE V.

Any candidate found guilty of violating his pledge in giving or receiving information, shall be adjudged guilty of grossly immoral conduct and shall be rejected.

RULE VI.

There shall be one set of questions for each section, and the same set shall not be used by any other Section.

RULE VII.

Each Section shall be allowed four hours to complete the examination on the branch the Section is on; the time, for cause, may be extended to six hours by the Examiners conducting the examination.

RULE VIII.

The candidate shall make 70 per cent. this year, according to the Rules of the Board, but for the year 1890 the minimum standard will be 80 per cent.

RULE IX.

An candidate who does not make more than 33⅓ per cent. on any one branch shall be rejected; yet for cause he may be permitted to have a second examination on that branch; and if he does not then get more than 33⅓ per cent. his rejection shall be final.

RULE X.

The Board may, under certain circumstances, supplement the written examination with an oral examination, or, in extreme cases, may substitute an oral for a written examination.

Dr. Murphy moved that all examinations in the future for temporary licenses shall be oral. Carried.

The examination fees for temporary licenses issued last year to the following named persons were turned over to the Secretary by the respective Examiners :

Dr. S. H. Cannady, Wilton,	N. C.
" John W. Tayloe, Union,	"
" W. F. Faison, Godwin,	"
" M. A. Gattis, Raleigh,	"
" J. H. Frey, Greensboro,	"
" F. Jurat, Keyes,	"
" William H. Hughes (colored) Oxford,	"
" Albert Anderson, Wilson,	"
" W. F. Stokes, Magnolia,	"
" E. S. Warlick, Morganton,	"
" E. C. Starns, Asheville,	"
" George I. White, Jefferson,	"
" M. C. Millender, Asheville,	"
" E. Q. Houston, Mount Mourne,	"
" R. H. Whitehead, Salisbury,	"
" W. F. Ross, Hot Springs.	"

The examination papers of Drs. S. H. Cannady, John W. Tayloe, J. H. Frey, Wm. H. Hughes (colored), Albert Anderson, W. F. Stokes, E. C. Starns, George I. White, E. Q. Houston, R. H. Whitehead and W. F. Ross having been carefully reviewed by the examiners, it was ordered that licenses be issued to them upon the payment to the Secretary and Treasurer of the usual fee.

Upon motion, it was decided that where the general average of the candidate was found to be above 66⅔ per cent. the applicant was allowed to withdraw his application, and he was to be permitted to stand an examination during the year for temporary license.

A large hall, with all the necessary conveniences, was obtained, and the written examinations were conducted by two of the Examiners upon one or two branches at a time, depending upon the size of the class. At *all times* two of the Examiners, according to the Rules of the Board, were necessarily present.

Information having reached the Board of Medical Examiners concerning the dispensing of liquor upon prescriptions indiscriminately and injudiciously made by licentiates of the Board, it was the sense of the Board that in any case where such could be proven to be true, it would be a cause for rescinding the license of such physician, and all physicians in good standing, as well as others interested in the preservation of the morals of the people, are respectfully requested to notify the Secretary of such unprofessional and immoral conduct.

Dr. A. W. Knox, who was deterred from presenting himself sooner, in consequence of damage to railroads by recent storms, appeared on the third day, and entered upon the discharge of his duties.

There were 63 applicants before the Board, 46 of whom were licensed, as follows:

Dr.	M. C. Strickland, Bliss,	N. C.
"	A. L. Wynn, Ridgeway,	"
"	C. E. Ross, Charlotte,	"
"	Edward S. King, Statesville,	"
"	J. H. Marsh, Gray's Creek,	"
"	John W. White, Wilkesboro,	"
"	E. L. Cox, Catharine Lake,	"
"	C. M. Benton, Newton Grove,	"
"	Thomas S. McMullan, Hertford,	"
"	Wm. H. Cobb, Jr., Goldsboro,	"
"	Edgar H. Sugg, Snow Hill,	"
"	Charles M. Strong, Charlotte,	"
"	Howard K. Edgerton, Kenley,	"
"	A. Y. Linville, Belew's Creek,	"
"	W. J. Richardson, Greensboro,	"
"	G. A. Renn, Raleigh,	"
"	W. H. Nicholson, Franklinton,	"
"	W. W. Vines, Tarboro,	"
"	J. H. Frey, Greensboro,	"
"	Jefferson D. Jenkins, Tarboro,	"
"	J. Y. Fitzgerald, Linwood,	"
"	O. L. Denning, Dunn,	"
"	T. J. Hoskins, Edenton,	"
"	J. H. Thacker, Reidsville,	"
"	W. G. Sutton, Seven Springs,	"
"	J. M. Ward, Moyton,	"
"	James P. Battle, Rocky Mount,	"
"	Edward R. Michaux, Greensboro,	"
"	G. M. McAden, Charlotte,	"
"	J. F. Highsmith, Hives,	"

Dr. Braxton Banks, Banks P. O.,	N. C.
" Albert Anderson, Wilson,	"
" George I. White, Jefferson,	"
" E. C. Starns, Asheville,	"
" S. H. Cannady, Wilton,	"
" P. Alston Nicholson, Washington,	"
" John A. Davis, Tarboro,	"
" William A. Graham, Charlotte,	"
" E. Q. Houston, Mount Mourne,	"
" J. W. Tayloe, Union,	"
" W. F. Stokes, Magnolia,	"
" W. F. Ross, Hot Springs,	"
" W. H. Hughes (colored) Greensboro,	"
" H. H. Hall (colored) Salisbury,	"
" Thomas R. Mask (colored), Rockingham,	"
" Richard H. Whitehead, University of Virginia.	

Attest:

William R. Wood, M.D.,
President.

W. J. H. Bellamy, M.D.,
Secretary.

Aconite in Acute Dysentery.—Dr. Beatson recommends tincture of aconite in this disease; it should be administered in doses of one minim half hourly for eight to ten hours, and then one minim hourly. The frequency of the stools and pain and fever are said to be diminished by this treatment.—*Indian Medical Gazette.*

Briquet has found that in France of 1,000 cases of hysteria 50 were in males, while other authors fix the proportion at 15 to 1. In males the symptoms lasted longer than in females, and they were more likely to occur in small and effeminate subjects. Lasegue had been led to employ the term peripheral hysteria from the fact that any form of irritation in a subject predisposed to hysteria might act as the exciting cause. For instance, a foreign body in the cornea might prove to set up the whole train of nervous symptoms resulting in hysterical blindness.—*Medical Science.*

NOTES.

Edwin Chadwick, the author and originator of sanitary systems of England and the world, has just bestowed a distinction upon knighthood by allowing himself to be knighted.

Apomorphine is not duly appreciated as an emetic. In a recent case of laudanum poisoning a tenth grain tablet, more than a year old, produced such prompt emesis subcutaneously, that it astonished the bystanders.

A Cysticercus Cellulosæ is reported by Mr. H. P. Robinson, London Pathological Society (*Brit. Med. Jour.*), found in the substance of the trapezius muscle. This case is very rare, only four others being on record.

Polyotia.—Hartman, of Berlin (*Internat. Cowgress of Otology*, Brussels, September 10–14, 1888), described at the Congress two cases of polyotia, and showed the photograph of a child who had, in front of the right auricle, a small mass resembling atrophied auricles. In this young patient there were other anomalies of development, as very marked asymmetry of the right side of the face, caused by atrophy of the superior and inferior maxillæ, and a congenital fistula near the nose. These anomalies may be attended by normal hearing.

Items of the Medical Examining Boards of Virginia.—The The *Virginia Medical Monthly* gives a tabular statement of the work of the Board of Virginia for five years. The summary is that 283 candidates were examined, 213 were awarded certificates on firsf examination, 68 were rejected on first examination, 24 rejected applicants appear second time, 15 certificates awarded on second examination, 9 rejected on second examination, 1 rejected applicant appearing third time, and the third time rejected, 7 incomplete examinations, by withdrawals or otherwise. We notice that the only two graduates of the Hahnemann Homœopathic Medical College, of Philadelphia, were successful. It is a sincere cause of congratulation that Virginians are working hand in hand with North Carolinians in raising the standard of medical education.

"I AM GLAD," says Dr. Holmes, "that there are born controversialists—and that I am not one of them."

DR. WARDLAW McGILL, for some years a practitioner of a specialty in Asheville, died in that city on the 26th October, 1888.

YELLOW FEVER—AUTO-INFECTION.—"The most interesting experience of all, however, is that of a train of refugees from Jacksonville to the mountains of North Carolina. There is evidence to prove that in less than thirty-six hours a source of infection was developed in this train by the refugees themselves. For we find that out of 218, 10 were attacked in the train or soon after arrival; whilst out of more than 900 unacclimated refugees leaving Jacksonville under more hygienic circumstances, by a short journey of one hour and a half to Camp Perry, only 24 were affected. The train to North Carolina was composed of cars brought into Jacksonville from the North an hour or two before departure; and no baggage was allowed on the train. The excess of cases, it appears, was due to auto-infection of the crowd shut up in the cars over thirty-six hours."—JOHN GUITERAS, M.D., *in Cyclopædia of Diseases of Children.*

DEATH OF DR. C. J. B. WILLIAMS.—Dr. Williams died at Cannes, March 25th, aged 84. The very mention of his name brings to mind the valuable contributions he made to medicine. His "Principles of Medicine" contained teaching far in advance of the pathology of his day, outlining, in fact, what has been since added to our knowledge of the process of inflammation. He was the first President of the Sydenham Society, the founder of the London Pathological Society and the moving spirit in the Brompton Hospital for Consumptives, the first hospital of the kind ever erected. A reperusal of his charming "Memoirs" (Smith, Elder & Co., 1884) will now afford renewed pleasure. The photograph given as a frontispiece in this work makes the author appear as a typical New Englander. For a few weeks of summer reading we don't know of a book that would give more pleasure to those who are fond of reviewing the history of the beginnings of our more modern medicine. Dr. Williams' impress upon the profession will be very lasting; and his private life must have been an excellent example of healthy morals.

TENNESSEE WHEELS INTO LINE.—We are very much gratified to learn that the Legislature of Tennessee has enacted a law creating a Board of Examiners. It lacks the thoroughness of our law, inasmuch as it admits diplomas as evidence of standing, thereby giving away the very position which they ought to hold, the colleges themselves being the "head and front of all the offending." They have one clause which might well be added to our law, which forbids the hawking by venders of patent cure-alls. Section 13 of the Tennessee law says in regard to these itinerants: "That any itinerant vendor of any drug, nostrum, ointment or application of any kind, intended for the treatment of disease or injury, or who may, by writing, printing or other method, profess to cure or treat disease or deformity, by any drug, nostrum, manipulation or other expedient, in this State, shall, if found guilty, be fined in any sum not less than one ($100) hundred dollars, and not exceeding four ($400) hundred dollars for each offence, to be recovered in action of debt before any court of competent jurisdiction."

HOW DOCTORS ARE VIEWED BY A GOOD-NATURED LITERARY MAN.—The doctor who could not laugh and make me laugh I should put down for a half-educated man. It is one of the duties of the profession to hunt for the materials of a joke on every corner. Most of them have so esteemed it. Garthe, Rabelais, Abernethy and a hundred or so more too near to be named, what genial, liver-shaking, heart-quickening, wit-awakening worthies they were and are! To the son who loves her best, Nature reveals most her tricks of workmanship. He knows there is a prize in every package of commonplace and sadness, and he can find it—not only the bit of fun shining to the eye of the *connoisseur* like an unset jewel, but the eccentricity, the resemblance, the revelation, countless signs and token of the evanescent, amusing, pathetic creature we call the human. Heartless, grasping, irreverent? The deepest compassion for human ails, the broadest generosity to human needs, the highest respect for all that is strong and pure and holy in human lives, I have seen in the men who come closest to the mystery of life and the mystery of death, who read the naked heart when it is too weak or too sorrowful to hide its nakedness, who know our worst, and are most of them wise enough to strike the balance. If they are cynics, it is we who have made them so. We are the books out of which they learn their lessons.—MR. A. B. WARD, *in Scribner's Magazine—Southern Practitioner.*

IS SYPHILIS CURABLE?—Why is this always a new question? The lecture of Dr. Gowers noted in our February JOURNAL, emphatically setting forth the incurability of syphilis, has elicited replies from four correspondents to the *British Medical Journal* (March 23) interesting rejoinders. Dr. F. Le Gros Clark, of Seven Oaks, Kent, says upon one point: "If the dogma of "the incurability of syphilis be qualified by such conditions as I have referred to, namely, a typical hard chancre occurring in a susceptible subject with some inherited constitutional flaw, and which has been permitted to run its early course without treatment, I think there is much truth in it. But I should be unwilling to condemn all such, though I think, comparatively few escape." Mr. Evan H. Hare, M.A., F.R.C.S., states the proposition that by cure is understood by some writers as re-susceptibility of a syphilitic to contract an initial sore, in other words, that susceptibility to reinfection is a proof of curability. "Why has the disease been considered curable? Because by lapse of time a syphilitic becomes apparently incapable of infecting another with primary disease. We are apt to go off on this side-issue, and to assert a curability not warranted by facts, as time often does, and may always, show. The reinoculation test failing, what proof have we of curability? There is, in fact, none; the subject does not admit of it, and the evidence—still accumulating—supports Dr. Gowers' dictum, one may almost say discovery. Some definite duration, no doubt, there is, but so prolonged, perhaps, as to exceed the average life-time of man. Again, its varying severity renders its natural history difficult. May not the cause of this extreme variability rest in the fact that the subject receiving the poison may have been previously affected by it individually, or through progenitors? Periods of latency are parts of its natural history. We often see women infected years ago through an embryo in a pregnancy who have freedom from symptoms, the disease being latent, until at the age of 50 they get ulcers of the legs." He adds: "Fortunately, though incurable in the strict sense, syphilis is most amenable to treatment for the relief of symptoms. Dr. Francis Codell says: "The time required for treatment by this [the non-mercurial] plan, namely, about two years or under, is not longer than by the strict mercurial plan. It is impossible to say, where mercury is given, when a case is well, as the remedy has such a power of concealing superficial symptoms; but under the non-mercurial treatment, when symptoms finally disappear, we have the advantage of knowing that, as a rule, there are no more to come." Dr. John St. S. Wilders says: "After an experience of twenty-seven years, during which time he has had under his care several thousand syphilitic patients, he has most unhesitatingly come to the conclusion that under certain conditions it is as curable as most other diseases." So it goes. Here is testimony of opposite sort upon a disease that is best known of any that afflicts our race. Every student has positive opinions about it, making the study of syphilis, upon the whole, the most interesting one within the range of our knowledge.

TUBERCULOSIS OF SALIVARY GLANDS.--Says M. Valude: "If we only think of the extent of the surface for contamination which the mouth presents, and of the infinite number of micro-organisms which live in this organ and on the tongue, we must be surprised at noticing the relative rarity of tuberculosis of this organ. How comes it that the microbe of tuberculosis does not develope in a situation where it lodges every day? Whence is it that one knows of almost no case of tuberculosis degenerating the salivary glands? It is probable that, as with the conjunctiva, it is in the number of other micro-organisms contained in the mouth that it is necessary to search for the reason of this immunity. Bacilli of tubercle cannot either evolve or produce specific lesions, thanks to the micro-organisms of the saliva." M. Valude has instituted, in order to verify this hypothesis, a series of experiments, trying to prove the inoculability of the salivary glands by a pure tubercle culture with the following result: That the saliva or that of each gland can very largely neutralize the effect of tuberculosis virus. If then tubercle shows this great difficulty of engrafting itself on the surface of the mouth or in the salivary glands, we can therefore only explain this by the accumulation of various micro-organisms which oppose themselves to the germinative action of the bacillus tuberculosis.—*Medical Science*, Nov. 1, 1888.

THE INFLUENCE OF TOBACCO-SMOKE ON MICROBES was the subject of a note by Hajeck at the meeting of a Vienna Medical Society on January 17. Basing his researches on the experiments of Tassinari, of Pisa, who showed that tobacco-smoke hindered the development of microbes, Hajeck looked up the vital statistics of Vienna, to see whether diphtheria is less prevalent among men, who generally smoke, than among women. He found that for the past four years the ratio of diphtheria cases in men to those in women was 1 : 2.8, or almost three times as many cases in women. This, he claims, bears out the experimental results of Tassinari. It may be suggested, however, that men, as a rule, lead more of an open-air life, and do not, so frequently as women, nurse children and others suffering from diphtheria. Israel showed that tobacco-smoke destroys bacteria-cultures. But it seems that Hajeck has based his conclusions on insufficient data. We should know the other habits of the males that had diphtheria, besides knowing whether or not they smoked.—*Journal of the American Medical Association.*

DR. CABELL'S CHAIR AT THE UNIVERSITY OF VIRGINIA.—We regret to learn that Dr. James L. Cabell has tendered his resignation as Professor of Physiology and Surgery at the University of Virginia. We are the more pained to know that this action is the result of enfeebled health. This ought not to surprise us, however, for we have long been of the opinion that the work incident to this double Chair was far too much for one man to do. For fifty-two years this venerable teacher has been doing the work of *two* men. It is therefore a matter of surprise that he has been equal to the task imposed upon him. Look for a moment at these two sciences, Physiology and Surgery, a half century ago. Contrast them with their respective fields of to-day, and expect one man to fill both chairs! What the Board of Visitors has failed to do in the past, they can no longer defer, and that is, divide this professorship into two distinct and independent schools, with a separate professor for each. Every interest of the University demands this action. While Dr. Cabell has performed this dual duty, and maintained the high standard for which the University has always been noted, it will be impossible to find the man who can as successfully perform the same work. The medical alumni with whom we have conversed directly or by letter, are eager for this action to be taken. When the Board meets, therefore, in July next, let them act upon this matter at once; and when the session of 1889–'90 opens in October, next, let us see the names of two worthy successors to the tenderly loved Cabell.—*Practice,* May, 1889.

THE AMERICAN MEDICAL ASSOCIATION will meet this year in Newport, on June 25th. If there was nothing else to attract, the place of meeting would be sufficient, but from indications, North Carolina will be ably represented.

JOHNS HOPKINS HOSPITAL.—The opening of this great institution took place this month in Baltimore. The institution has to be visited to be properly appreciated. It is an honor to America, and will be the headquarters for original research in general pathology, besides the buildings serve as models of heating, lighting and ventilation. We congratulate Baltimore on this grand acquisition, and hope to see the young doctors of our State aspiring to positions in the institution.

SURGEON GENERAL S. P. MOORE.—The press dispatches announce the death of Dr. S. P. Moore, late Surgeon General of the Confederate States. In the days of the Confederacy he was a very busy official, having vast interests to control, and order to bring out of chaos, to say nothing of solving the great difficulty of supplying regiments in active service with medical officers who had sufficient experience in surgery. His attempt to put volunteer officers under the strict rules of the regular army must have been very vexatious to him, as it was annoying and ruffling to the temper of men who had not seen service. North Carolina attempted to compliment him by naming her Richmond hospital after him, but it seems to have been a disappointment to him, "Winder," or one of the large hospitals having been in his mind for that purpose, so said the rumor of the day. The conflict of Surgeon General Moore with the North Carolina authorities in regard to the equality of State and Confederate States commissions we can afford to smile at now, but it created quite a stir in 1862, and some of the actors well remember how pertinacious he was in attempting to divide the stores which North Carolina had so generously bestowed on her own hospital, with the other hospitals in Richmond. Dr. Moore served in his first position to the end of the war, and succeeded in calling around him surgeons of distinguished abilities, and his official duties were probably conducted with as much ability as could be in the circumstances,

BOOKS AND PAMPHLETS RECEIVED.

The Philosophy of Memory, by D. T. Smith, M.D.

Journal of the Elisha Mitchell Scientific Society, Part II., 1888.

Placental Development, by H. O. Marcy, A.M., M.D., etc., of Boston.

Eczema, Its Treatment, by Albert E. Canier, M.D., Detroit, Michigan.

The Histology and Surgical Treatment of Uterine Myoma, by H. O. Marcy.

Third Biennial Report of the Regents of the University of Texas, December, 1888.

Physician's Leisure Library—Diseases of the Kidney, by Dujardin-Beaumetz, M.D.

Bulletin North Carolina Agricultural Experiment Station, October–November, 1888.

Is Astigmatism a Factor in the Causation of Glaucoma? by Samuel Theobald, M.D.

The Influence which the Discovery of Cocaine has Exerted upon Ophthalmic Surgery, by Samuel Theobald, M.D.

Physician's Leisure Library—Clinical Lecture on Certain Diseases of the Nervous System, by J. M. Charcot, M.D.

A Eulogy upon Cornelius Rea Agnew, read before the New York Academy of Medicine, by T. Gaillard Thomas, M.D., June 7, 1888.

Superintendent's Report of the Eastern North Carolina Insane Asylum; also the Report of the Treasurer (*ex officio*) for the Year 1888.

Gunshot Wound of the Abdomen, Illustrating the Use of Rectal Inflation with Hydrogen Gas as a Diagnostic Measure, by N. Senn. M.D., Ph.D.

The Medical World, Philadelphia, Pa.

Report of the Commissioner of Education for 1886–'87.

Essential Oil of Sandal, Gl. Santal, Flav. Pur., by L. Midy. Paris.

Physician's Leisure Library—Bright's Disease. Geo. S. Davis, Detroit, Mich.

Pulmonary Consumption Considered as a Neurosis. George S. Davis, Publisher, Detroit.

The Chest in Health and Disease, by S. S. Burt, M.D. Published by D. Appleton & Co., N. Y. Pp. 206.

Repression of Menstruation as a Curative Agent in Gynecology, by Eugene G. Gehning, M.D., of St. Louis.

Success and Failure of Electrolysis in Urethral Strictures, Especially Dr. Key's Methiod, Reviewed, by Robert Newman, M.D.

Report of the North Carolina Institution for the Deaf and Dumb and the Blind, from November 36th, 1886, to November 30th, 1888.

Prevention of Yellow Fever in Florida and the South, by W. C. Van Bibber, A.M., M.D., Baltimore, being a paper read before the Baltimore Academy of Medicine, December 4th, 1888.

The Pathology, Clinical History and Diagnosis of Affections of the Mediastinum other than those of the Heart (Aorta), by Hobart Amory Hare, B. Sc., M.D. Philadelphia: P. Blakiston, Son & Co.

The Electrolytic Decomposition of Organic Tissues, by George Rohé, M.D., Professor of Dermotology and Hygiene in the College of Physiology and Surgery, Baltimore. (Reprint from the *N. Y. Med. Jour.* for December, 1888.)

The Importance of the Early Diagnosis and Treatment of Nasal Polypi, by Kemp P. Battle, Jr., M.D., Surgeon for Diseases of the Eye, Ear, Throat and Nose to St. John's Hospital and to that of the Leonard Medical School, Raleigh, N. C. Read before the Medical Society of the State of North Carolina, at Fayettevile, May 8, 1888.

READING NOTICES.

S. E. Gibbs, M.D.. 2089 Lexington Avenue, New York, writes: "I have used Lactated Food in a case of intestinal digestion, after the case had been given up as hopeless."

Dallas, Texas, June 5, 1888.

Messrs. Reed & Carnrick:

Gentlemen:—It gives me pleasure to say that I regard your Food Preparations *far superior* to all others. I can point to many little ones whose lives, I feel confident, were saved by them. I have been practising medicine in Texas for twenty-two years, have tried many other preparations, but after all I hold to yours as the old reliable; they have never disappointed me. My motive in making this statement is that others may be induced to give them a fair trial.

Yours truly, J. L. Cunningham, M.D.

Hysteria.—I have used Peacock's Bromides with fine results, and shall continue to use it. One case in particular illustrated its effects. The patient (female) was much troubled with hysteria, and, as usual in such cases, had every imaginable disease. I gave her Peacock's Bromides, and, on taking as directed, all hysterical phenomena disappeared. In such cases I consider it the remedy par excellence.

Olivia, Minn. E. F. Conynghame, M.D.

Messrs. Eli Lilly & Company, of Indianapolis, have issued a work entitled Hand-Book of Pharmacy and Therapeutics. The aim, as stated in the introduction, is to furnish the busy practitioner a reliable means of ready reference, at once concise, systematic and authoritative, to which he may refer with confidence in cases of doubt. Younger members of the profession and medical students will find this work full of suggestions. It will be sent free to any physician, druggist or medical student, by addressing Eli Lilly & Co., Indianapolis, Ind., mentioning this Journal.

Menorrhagia, Leucorrhea.—Macadam Grigor, L.R.C.S. and L.R.C.P., Alexandra Avenue, Battersea Park, London, says: "F. O, widow, 32 years of age, one child, suffered for years, and was frequently under medical treatment, getting little or no relief. When she came under my care, about three months ago, I found her very weak and anæmic, complained of pain in left hypogastric region and sympathetic vomiting. She told me that at the menstrual period she nearly flooded, and between the times, only 14 days, she suffered very much with the whites. I thoroughly examined her and diagnosed: Irritation of left ovary, menorrhea, leucorrhea, prolapsus with aterocision of uterus, inflamed meatus urinaris, the effect of this being anæmia. * * * When the ALETRIS CORDIAL came under my notice, about six months ago, I put my patient under its treatment, with the result that the menorrhea and leucorrhea have ceased, and the slight prolapsus uteri gives no discomfort. I may state that I still keep her under the tonic.

DIGESTIVE FERMENTS IN THE INTESTINAL DISEASES OF INFANTS.—It seems somewhat strange, with our present knowledge of digestive ferments, that the application of pancreatin and pepsin in the diarrhœas and intestinal disorders of children, especially those arising from inanition, is not more general. * * * Recently we have obtained the best results from such treatment, though it must be admitted in cases of unusual gravity, when collapse threatens, that coto and wild yam are sometimes of value to check the flux, the digestive ferment following to secure proper digestion and nutrition. In 1856 Joulin and Corvisart (*Rev. Med. Chir. de Paris*) outlined this mode of treatment, and claimed the happiest results therefrom; and more recently it was advocated by Trousseauel and others. Later still, Dr. Milner Fothergill says of pepsin: "Its utility in the treatment of imperfect indigestion and diarrhœa in children is certain." Prof. J. Lewis Smith, of Bellevue Hos. Med. College, expresses exactly the same opinion. Prof. Frederick John Farre commends pepsin "*very highly in cholera infantum and summer complaints of children.*" Bartholow says: "Very great success has been attained in the treatment of the *diarrhœa of infants* by pepsin." * * * Thus we find Parke, Davis & Co. issue a work on Digestive Ferments that is accurate in all details, and further, they have placed upon the market a new pepsin of higher digestive power than any heretofore introduced, and possessing the exceptional advantages of being absolutely *free* from ptomaines, readily soluble and of a digestive power hitherto unattained. Moreover, the standard of pepsin has been raised by the better manufacturers, and it is the practitioner's own fault if he is not able now to secure a preparation suited to his needs.

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ORIGINAL COMMUNICATIONS.

HISTORY AND DEVELOPMENT OF ASEPTIC AND ANTISEPTIC MIDWIFERY.

By L. G. Broughton, M.D., Reidsville, N. C.

(Read before the Medical Society of the State of North Carolina, at Elizabeth City, April 16, 1889.)

Midwifery, as it is generally termed, as well as all other branches of medicine, has continually been on the lookout for something new and something that will help it in attaining to that degree of perfection it so well deserves. But in this age of rapid development and rapid accumulation of knowledge we are too prone to ascribe everything to the genius of the present decade. This is as true in this line as in any other, and while this age has done much in this and other scientific lines, yet is not true that *all* the praise should be given it for some of the grandest theories that have entered into the mind of man were conceived in the ages of "the far away passed," and have lain dormant only to be revived and put into practice by the ages that have followed. And especially is this true with regard to the development of obstetric practice. The obstetric art, like the art of surgery, can be traced thtough earliest records. Women who had themselves borne children assisted their neighbors in like circumstances. But for nearly two thousand years obstetrics as an art or science lay completely dormant, scarcely a step in advance was made and a woman in labor was regarded as but little more than an ordinary brute undergoing a similar trial. But from the days of Hippocrates, in Greece, about four hundred years before Christ, a new era began to dawn, and from him we can truly date the beginning of our present scientific practice of obstetrics. Had the progress gone on final culmination into a grand science would not have been so long coming; but matters changed, women came upon the field and claimed their right to practice this branch, which was granted, and the male practitioners disappear from the scene, which, to a great extent, accounts for the poor progress of the art. During this period it was unlawful for a male to enter a lying-in room, and the only instances in which this was allowed at all was when those supposed to be endowed with supernatural power, as the priest, were admitted because of that fact; and not only was this a violation of the laws of the land, but the penalty was death, and more than one case is on record in which lives were lost in the endeavors to study the art of obstetrics from a clinical standpoint. During this period progress was seen to go only so far as the natural eye could reach, when it stopped. The true mechanism of labor, the anatomy of the parts, etc., were, of course, not understood, for they were not allowed to hold post mortems or to do anything that would help them in determining anything of its true nature. This state of affairs lasted, with only slight variations, until about the middle of the Sixteenth Century, when again the medical man proper, with scalpel in hand and faint knowledge of the anatomy of the parts, entered the obstetric field and began to elucidate many of the hitherto hidden mysteries connected with this practice. One notable fact in the history of obstetric development was as progress was made in this line society was divided and culture and refinement were seen taking sides with obstetric progress, and is this not true until this day? Can we not map out the sections of social culture by the developments in obstetric practice? Wheresoever we find the ignorant midwife giving way to the skill of the scientific doctor we at once see the dark cloud of ignorance and superstition being dispersed by its master refinement. From the Sixteenth Century, when the first successful podalic version was performed, to the latest discovery in aseptic midwifery, is a period of wonderful interest to the man who is seeking after obstetric history and development. It is well to note that up to this time there had been nothing discovered as to the general positions of the child in-utero save that of the cephalic, and all other positions were converted into this if possible. But with all this there was some intuitive knowledge among them that has been of great value to the students of obstetrics from that time to the present. And the physician of to-day, as he rejoices in the completed science, is rejoicing in some of their intuitive ideas which have been developed by others of more opportunities. Cæsarean section was concealed during this period and practiced only by the most skilled of that day. Embryotomy was also in vogue, and was the way in which slow, tedious labors were terminated. But it strikes me that the most striking feature of that period was their intuitive knowledge of asepsis. We read that away back before the days of Hippocrates a very prevalent idea existed that in some mysterious way there was danger in having women confined close together, so they isolated their puerperal women. In some places the practice was to have burnt earth laid all around the couch on which lay a puerperal woman. In other places they had burnt wood, vegetable charcoal put in the same way. In still other places they kept boiling a kettle of water that the steam might in some way drive away the soil; and Hippocrates even went so far as to use vaginal injections of some fluid for several days after confinement. In some places the room in which there had lain a puerperal woman was regarded for months as a place of uncleanness, and no other woman would dare be confined in the same chamber until it had been washed and then smoked with the smoke from the burning of a certain kind of wood in which there was to them a mysterious healing. Was this not far in advance of our best regulated maternities in many respects? Do we do so much to regulate and prevent the spread of this dreadful trouble which to them was a matter of mystery and to us a matter of theory and science? But the time had again come for a change—the general public were growing too wise, so "the here and there feeble knowledge was ruthlessly torn from the general public by the power of the Romish Church and confined within their convent walls as a scepter with which to slay the masses which were kept in ignorance. The teachings of their able men were lost or laid aside and replaced by ridiculous theories and methods which originated in fanaticism and greed upon the ignorance of the people." The child-bearing woman now is denied the poor but helpful knowledge of the primitive epoch and the aid of the male practitioner which again gave a back-set to obstetric practice. The evils of the previous ages were kept in vogue aggravated by the grossest of ignorance and barbarous brutality. But this state of affairs did not last long. The general mind was set on fire as by inspiration, and there came a light gleaming forth pregnant with renewed energies and new ideas, and strengthened by more vigorous determination. The confines of the convent were torn asunder, and from that day scarcely a shadow has darkened the pathway of the progress of obstetrics. Step by step it has advanced, until to-day it seems that the topmost round has been reached and that there is not much more to do. And the man of to-day who does not practice obstetrics successfully must abuse his indolence, and not the science, as it is offered him.

It would be very interesting to note the successive periods of development in obstetric science in every particular, but for want of time and space I will leave all this alone and content myself with a further study of the subject more directly, viz: "Aseptic and Antiseptic Midwifery." In this particular alone the Nineteenth Century has done more for the world than any century preceding it. Many advances have been made during this century—science and art haue been worked seemingly to their highest pitch. But from this fact alone the noble women of the world should bow the knee of humble submission and render unto the old century everlasting praises as she is about to take her departure, for truly can it be said: "She hath brought a balm with which to heal their infirmities." And if they have cause to say this of this century, what should they say of the great Semmelweis, who, in the year 1847, was the first to catch again the previously mistaken idea of the infectious nature of puerperal fever, differing from the former, however, in that to him it was a matter of scientific certainty, and could be prevented by scientific precautions, and from which discovery has come our present means of prevention. Can it be said that he was a benefactor of not only the female, but also the entire human family? Yea, and more than a benefactor, for by his discoveries (imperfect though they were) of puerperal fever thousands of lives have been saved and much suffering mitigated in all parts of the civilized world. In order to appreciate more fully what this great man did for his day, let us notice some of the reports of some of the leading hospitals and maternities just prior and just after his discoveries were put before the public. In the great Vienna Maternity during the severe epidemic just before his discovery the mortality was 10 per cent., and just after his plans were put into practice the mortality rapidly fell to 1 per cent., and yet his ideas were very imperfect, nevertheless they were based upon facts as set forth in the statistical reports, and they furnished a stimulant sufficient to call forth the labors of others who rushed at once to his aid. In the year 1843 Dr. Oliver Wendell Holmes contributed an article to the Boston Society for Medical Improvement entitled "The Contagiousness of Puerperal Fever," and in 1855 another on "Puerperal Fever as a Private Pestilence," and as a result of his investigations the present idea of puerperal septicæmia was outlined, and has continued to develope, until to-day the once fatal malady is looked upon as no more fatal than many other troubles about which we give ourselves very little concern. Holmes gave most valuable aid in this matter, really giving birth to the correct theory about the year 1850, and living to see it reach the zenith of its glory.

The aseptic period, while really it was not developed until about the year 1876, by Bischoff, in Switzerland, yet dates its foundation back to the intuitive epoch, when, practiced solely by intuition, some very sensible asepsis has occcurred. The knowledge, however, was lost until about the middle of the present century, when it was again caught up by Semmelweis and Holme.. But' as intimated, Bischoff, in Switzerland, seems to have been the first man who put before the world the scientific means of preventing puerperal septicæmia. So, really, asepsis takes the lead of antisepsis, both in point of discovery and in applicability and utility. Now, let us notice what is meant by the term asepsis. We find the word is of Greek origin, coming from the words ἀ, not, and σηπω, to rot; literally meaning not to rot, preventing decomposition or keeping of septic infection. Is this not the key-note in the practice of medicine?

Can we want anything better? In this age of scientific medicine is it not our aim and purpose to prevent as well as to cure? And especially is it not our duty to prevent, if possible, a trouble the fatal nature of of which we so much dread as that of puerperal septicæmia and puerperal fever? Now, then, we have a second term denoting a second kind of practice, viz: that of antisepsis, which comes from the Greek words *αντι*, against, and *σηπω*, to rot; literally meaning against rotting, i. e., supposing the trouble to have begun, then comes antisepsis and treats it as such—quite a difference here in these two *similar* terms! The antiseptic treatment as a specific only dates its origin back to about 1870. The ancients knew nothing by intuition or otherwise about the specific treatment of these troubles, and until Holmes' day no advance in this line had been made. The intra-uterine injections, as practiced by Hippocrates, have been supposed to have been directed to this end, but without a doubt his mind was running in the line of asepsis, or the prevention of these troubles, and not for their cure, for he used them almost in every case. So, then, about 1870 this discovery of the power of certain drugs in cutting short these special classes of complaints was made, and was the practice in vogue until about 1876, when that of asepsis was inaugurated, which, to a great extent, has taken the place of the former. Now, then, there is a question of great importance to those who wish to keep abreast with the improvements in their profession, and that is, Will these theories hold good, and will the remedies that are recommended do what for for them is claimed? I think there is no fact more fully demonstrated in medicine than this—that they fail in same instances I do not doubt, but at the same time we may feel as sure of success in practicing in accordance with this theory as in any other, if, indeed, we may not feel more so. I make this assertion, based not only on my own limited experience, but also on the experience of some of the wisest men we have. In Paris, we note from their statistical report that from 1876 to 1880, under antiseptic treatment, the mortality was from 7 to 10 per cent., while from 1880 to 1887, under aseptic practice, the mortality was far below 2 per cent. In Germany they have almost banished it from their midst. From a translation from a Dutch medical journal I get the following: "In one of our largest maternities in 1,031 cases of confinement under antisepsic practice there occurred 58 cases of puerperal fever and two deaths. While in 1,400 confinements under strict aseptic precautions there occurred not a single death—the first period being from 1884 to 1885 and the second from 1885 to 1887. Are these facts not encouraging to us? Do they not strengthen us in our faith in the theory? In our own country, however, the facts are not so encouraging, simply because the rules are not so strictly adhered to. But they are sufficient to verify the fact that the theory is correct. The antiseptic plan, of course, holds good only in case the aseptic has failed, and we are in the midst of trouble, when it comes with all of its force and does its part well.

Prevention is the cry with every true practitioner of medicine and obstetrics, and I am quite sure there is no class of cases in which the truthfulness of the old adage, "An ounce of prevention is worth a pound of cure," is more fully realized.

Now, then, the most practical question is, What shall be used to carry out these rules and answer these purposes? 1st. I will mention as the best asepsis *cleanliness.* "Cleanliness is next to Godliness," and surely is this true with regard to obstetric practice. "If we would succeed we must be clean"; and not only is this true in obstetrics, but in all cases where there is danger of aseptic infection. The hands must be clean and the nails attended to. The bed should be prepared so as to protect all parts that would be troublesome to remove. After the labor is over all soiled garments must be removed so soon as the patient has time to sufficiently regain her strength, if, indeed, she actually needs time. In all cases where it is possible remove soiled garments *at once.* When that is done there is one great source of aseptic infection gone. But we should not be content with these precautions, but we should resort to still other means. There is quite a difference of opinion as to the remedy of most value here. I think, however, the weight of evidence is in favor of mercuric chloride or corrosive sublimate. This drug was introduced to the profession for this purpose by Tarnier in the year 1811, and the strength used was 1-2000, the strength generally used to-day. The physician should always keep in his case a preparation of this drug of this strength, so that when he is called he is ready. A convenient way to carry it is to make a solution after the following manner: Bichloride ʒ j, hydrochloric acid dil. ʒ ij, alcohol ʒ xiv. Sig. A teaspoonful to the pint of water makes a solution of 1-2000. The reason why the acid should be combined is to assist the action of the bichloride, which acts better in an acid solution [and prevents the formation of albumate of mercury]. When I am called now to a case of labor I take this preparation with me, and upon arriving I make my solution 1-2000, wash my hands in it good, go to the bed, make my examination and arrive at my conclusions. If the labor has really begun, I take my syringe, convert my solution into a 1-4000 by adding an additional pint of water and inject gently up vagina until all parts are reached that can be. I then prepare a second solution like the first and keep on hand in which to wash my hands every time before making my examinations. When the child is born I wash my hands as before, wash my thread and scissors and tie and cut the cord. I then withdraw the placenta with same precautions as before. Dressing the navel is the next thing; to do this I get a small piece of ordinary gauze, wash it in the 1-2000 solution, dry it and fold it nicely over the navel, using no cord or anything except the gauze, put on the band and let it alone, and it is wonderful how nicely it will slough off, and that without odor or suppuration. I then prepare an antiseptic pad for the mother on which to catch the lochia, in the same manner. There are several methods of making these pads, but this is simple and answers every purpose. The bed must be stripped every day and intra-vaginal injections kept up twice a day for a week or more. For this purpose I usually use a 2½ per cent. solution of carbolic acid, made by using crys. carbolic acid, ʒ ij, and water 1 pint. I direct about half gallon hot water to be injected, after which the acid solution is to be used.

My experience in these cases: I can truthfully say I am highly delighted with them in every case. The wonderful manner in which the navel heals under the precautions suggested is sufficient to pay for the whole trouble. Since I have been using these precautions I have had five cases of instrumental delivery and one embryotomy and never a particle of after trouble. No trouble ever occurs with the breast in these cases with aseptic precautions, which is accounted for as we account for the prevention of other septic troubles, for that of inflammation of the breast is only a part of septic absorption.

Now, then, I have avoided a description of puerperal fever or any of the septic troubles in the puerperal woman, for I take it for granted that all are awake to the teachings on all of them, and I have tried to confine myself, as best I could, to a brief history of the discovery and practice of asepsis and antisepsis, and if by this study I shall cause any of my young fellow practitioners to awake to a knowledge of these scientific facts, I shall feel well paid for my work. I have avoided, also, any reference to internal medication, because of want of time and space.

SOME OF THE MEDICO LEGAL ASPECTS OF INEBRIETY.

By T. D. Haigh, M.D., Fayetteville, N. C.

(Read before the Medical Society of the State of North Carolina, Elizabeth City, April 16, 1889.)

An article in the April number of the *North American Review*, by W. S. Searle, M.D., on "The Idiosyncrasies of Alcohol," has determined me to present to this Society some thoughts on the kindred subject of inebriety which I have jotted down now and then at different times, and which, in a more extended way, I presented to the Medical Association of Cumberland. Not that there is anything very new to be offered, but because it is a subject which has been, without cause, relegated to those who have the least opportunity to observe, and no ability to deal with the question in a manner which will lead to a practical solution. Unfortunately, too, this subject has been so allied to fanaticism, and men of every town have so often heard attributed to the use of alcohol every evil under the sun, that the subject has been rather shunned. But let us for awhile strip it of all these whims and caprices and view it from the true standpoint, and see if there is no practical way of dealing with it and whether a good end may not be reached, dictated by commonsense and in accord with that spirit of our profession which always has for its aim the amelioration of human suffering.

While scientific thought has led the profession years ago to the conclusion that the inordinate, uncontrolable desire for stimulants (alcoholic) is a disease, as truly and as surely as any other departure from the normal healthy condition of the system. Still the popular belief that this desire is entirely under the control of the individual, has in a great measure become the acquiesced in opinion of medical men generally. I say acquiesced in opinion, because it is a mere acquiescence, and arises more from the practical fact that these cases are being dealt with by the law as criminals, and do not, by general usage, come under our care as patients or sufferers. To return, then, to the article referred to by Dr. Searle, we find that in reciting the causes of this disease as formulated by Dr. Mason, to wit: (1) it may be produced by the habit of intoxication in a man otherwise healthy and of some heredity; (2) caused by sunstroke, by cerebral concussion or cerebral disease; (3) by heredity, he says: "With the exception of the first point Dr. Mason is supported by a long array of English and continental authorities of great learning and experience." This first point, he claims, is an open one and ought not to be accepted without the most clear and decisive evidence of its accuracy, which does not now exist, and probably never can be furnished; and further, that if this opinion is accepted, many a criminal now in prison and many another whose crime has been expiated on the gallows, properly is, or was, rather a subject for an asylum for the insane, and that therefore society cannot afford to believe that habitual drinking furnishes an excuse for crime or any favorable modification of responsibility.

Surely, while there may be no evidence collected into statistical shape that men with no hereditary predisposition and with no other cause but that which comes from the habitual use of stimulants have become dipsomaniacs, still that such evidence exists many of us who have been close observers for years can fully attest. What better proof can we have of this fact than that which comes to us in this way, from men who in our smaller towns come in close contact with their fellow-men and have the opportnnity of observing these cases from the beginning to the end—an opportunity which does not come to the city practitioner from the fact that individual cases are of necessity lost in the crowds that come and go year by year. It matters not to what conclusion this may lead; we are seeking for truth; what if, in the past, the law has punished as criminal those who should have been sent to asylums, this is no new reason why we should blindly adhere to a wrong, but rather that we should try in the future to decide on the merits of each case and not condemn the guiltless. And just here, too, when we say that drunkenness is a crime, we must not confound the drunkenness with that which drunkenness leads to—the disease of dipsomania. Though the line of demarcation is difficult to define, still there remains no reason why those on either side of the line should not be placed under such care as to prevent the occurrence of inebriety in the one, and relieve or cure the disease in the other. That it is a disease, and that its continued use produces structural changes in the brain, autopsies made with the greatest care reveal. All cases of death in inebriates uniformly show altered structure of the brain and its meninges, inflammation, adhesions and thickening of the membranes, softening at various points, thus proving that the utter lack of responsibility on the part of those whose brain structure has been so altered.

It is well known, says Hammond, that alcohol has the effect of weakening the will to such a degree as to render the subject absolutely incapable of taking the initiative in any important undertaking or of resisting influences brought to bear on him, and which he knows he ought to resist, and more, it produces softening of the brain with slowly progressive loss of mental and physical power, or it may be that only some minute point is disturbed and only a result as of loss of hearing, speech, sight, or of some simple faculty.

Dr. Crothers places the cases of inebriety as high as 60 per cent. from heredity. Thirty per cent. of these will have moderate or excessive drinking parents, 20 per cent. will have insane, epileptic, idiotic or eccentric ancestors.

Magnan, in his work on alcoholism, says these alcoholics with hereditary predisposition are less amenable to treatment, physical and moral, than others. Among other causes of this disease, blows on the head, shocks of various kinds, fear, sorrow, and the like, are enumerated by the highest authority, but it may be they are only causes which develope the hereditary tendency. If, then, it is a disease, it should not only be recognized, but treated, as such.

In cases of insanity we must have perfect control of the patient, because the intellectual impairment renders him unable to control his own acts for his own good; we therefore place him in an asylum, where he can neither injure himself nor others. Free from all exciting causes, with nothing to recall to his mind his former surroundings, and with everything excluded which tends to excite, he is subjected to the use of such remedies as the skilled superintendent may deem needful, and altogether placed in such an atmosphere as may be most conducive to a perfect restoration. Now, this is precisely what should be done with those who are approaching the border-land of this disease or in whom it has already been developed. If every man found under the influence of alcohol came thereby under the eye of the law and received this treatment, this suspension of all rights, and were placed under restraint, he would have rest, and when the immediate effects of the stimulant passed off there would be an interval for thought and renewed effort for reform.

"Insanity is defined as a manifestation of disease of the brain, characterized by partial derangement of one or more faculties of the mind, in which, while consciousness is not abolished, mental freedom is weakened, perverted or destroyed." How wonderfully fitting a description of the inebriate!

Inebriety is not only a disease, but it is the fruitful source of other diseases. It opens wide the portal to phthisis, disease of the liver, stomach, intestines, and to every nervous affection nearly that flesh is heir to. It has also its periodicity, which is very remarkable, and one of the strong proofs of the position here taken

In the present day when the mental faculties are called into such incessant action, and when the hurry and excitement attendant upon the haste for place and reputation is taxing every faculty of mind and body, we would naturally look for an increase in the victims of this disease, and such we find to be true. The estimate made, it is true, from very imperfect data, rates the number of inebriates in the United States as high as 500,000, and still increasing, and to increase, unless the popular idea in regard to drunkenness undergoes a thorough change and laws are enacted which will place the drunkard and the inebriate under its beneficent protection. To this end, no other body of men can lend such potent aid as the members of our profession, but we have, I fear, instead of being leaders, been led in this matter. From our very childhood the popular idea of drunkenness has seized fast hold upon us, and forgetting, even in our later years, when reason alone should guide us, that behind this trouble many and many a time there is a propelling, irresistible force, we place all drunkards under the same class, and act as if we believed that the ability to cease from drinking was within the power of all. The profession seems to have lost sight of the fact that inebriety, the irresistible, consuming desire for alcohol, is a disease, and that, as any other disease, it should receive the careful attention of medical skill, and that, under certain favorable circumstancee, it may be brought to a successful cure. I say lost sight of the fact, because we all know very well that it is a fact, but just as many another fact is lost sight of in the overwhelming erroneous conviction of public opinion, so this one has apparently sunk into oblivion so far as systematic, useful, practical recognition is concerned. Do I not state a simple truth when I say it is a rare occurrence for one of the profession to have placed under his care for prolonged, systematic treatment, a case of confirmed inebriety. It follows, as a matter of course, that so long as the opinion exists that each return to the excessive use of alcohol is a voluntary matter and is under the individual control, these patients and their friends will see no necessity for medical treatment. And even when the right view of the matter is taken, existing laws do not allow the necessary restraints, without which all other treatment must prove futile.

Now, if in every county we could by law establish houses of refuge or of industry, where every person who used alcohol to excess could be confined and be subject to proper treatment and care, and be at the same time so controlled that they would be entirely free from the temptation to use alcohol. If these homes for the inebriate were so arranged that every inmate would be compelled to do some useful work so soon as he recovered from the immediate effects of the stimulant, and the amount earned be given to their families, or, if there were none dependent on them, to the county, what a vast amount of the crime would be avoided, and how would the hearts of many wives and children rejoice in that they could look forward with hope to the complete restoration of husbands and fathers to useful lives!

Statistics show that no good results to the confirmed inebriate from confinements of less than one year; this time is necessary to eliminate from the system the effects of alcohol and also to give training and strength to the will power. "Not only must the alcohol be thrown out of the system, but it must also be kept out until the perverted body comes back to its natural vigor."

Any one who has read the proceedings of the International Congress on Inebriety, held in London, July 5th and 6th, 1887, will see how thorough was the agreement upon this point of perfect control and forced abstinence. "The removal of the exciting cause, the reparation of the physical injury done and the remedying of the pre-inebriate morbid condition and strengthening the moral powers." Over the whole world the terrible effects of this disease are so keenly felt that men are searching for some solution to the question, How shall we save these men going down to death from the effects of alcohol? What shall we do to stop this demon of madness which is desolating so many homes, blighting so many lives, filling so many prisons and destroying so many immortal souls?

So earnest are these people in their desire to do something, something to place out of the way of these now but youths this temptation, and to rescue loved brothers, fathers and sons from that which means destruction of all earthly comfort, that, like a mighty wave, this thought is sweeping before it and threatens to overwhelm all other questions of political importance. Did these people know that this uncontrollable desire for stimulants is a disease and that it is hereditary, that the simple fact that a man who drinks to excess habitually may in the end have offspring who will be born with this drink impulse in them, and that this hereditary inclination may be quickened by the first taste of spirituous liquors. Did they know that epilepsy, diseased liver, faulty mental development, in some cases leading to idiocy, was the result of the inordinate use of alcohol passed down from one generation to another. Did they know that the suicidal tendency is more readily awakened, and that the brain, under life-stress, is so much more readily excited or depressed that insanity, like the black darkness of night, full of horrors, comes more swiftly to those who descend from parents that have been inebriates, how would they appeal to us to find some way by which the world might be saved from the disease and destruction which follow in the train of this Jugernautic car which is crushing under its iron wheels the hopes and joys and bright anticipations of so many thousands of homes!

Truly we can repeat the words of Dr. Gadding, Superintendent of the United States Hospital for the Insane: "It is time that, as medical men, we had some answer to make to this question, What shall be done with them? As scientists, curious of the bacillus, we forget the worm of the still; as savants, we show a pardonable enthusiasm over the shade of a jug, on which we may with laborious pains decipher the symbol of Anembis or Osiris, but manifest an inexcusable indifference to that human treasure which we have in these frailer than human vessels on whose shattered fragments we might still trace the lines of the image once stamped there. It is time that the scientist and scholar spoke, that he turned from the contemplation of cliff dwellings and bone caves and drew out from dens of infamy and caverns of despair, where he has been hiding, this tragdolyte of our time. When the medical men of the country move in earnest in this, we shall have public sentiment, and out of that sentiment will come law."

Should not the regular gradation by which these cases pass down to the same sad end cause us to stop and consider if there is not some way to lead them out into a brighter life? They are as helpless as the man who has been led into one of those deep canõns of the far West, who, losing the path of entrance, wanders helplessly along the stream, looking up every now and then and seeing the beautiful sky above, with no hope of ever scaling the walls that hem him in, till, weary and worn, he lays down to die away from home and loving friends.

We have it in our power as a profession to do much in this matter. It is our boast, aye, a just cause for pride, that we can do so much for the good of our fellow-men, and that we can do it unselfishly. We have these talents given us—these blessings whereby we can bless—the neglect to use them and garner up treasures of pure and lofty action, instead of allowing ourselves to be led by popular prejudice, instead of stepping to the front like good generals marshalling the hosts ready to be led to the work in so good a cause, will surely add nothing to the glory of our career.

And just here I desire to call attention to the danger of using alcohol in any form with young children, especially when this hereditary taint may be supposed to exist, because statistics show that in many cases this tendency is quickly lighted up in the young. In no case, then, in young persons, should alcoholics be allowed in disease until the physician has thoroughly investigated the probabilities of hereditary predisposition.

There is an increasing disposition in this country, especially on the part of nurses, to use some form of spirits with very young children to produce a quiet rest, or relieve what they term colic, which, if it exists, is most likely the result of the abominable use of the old woman's remedies—catnip tea, ginger tea, fennel-seed tea, *et id omne genus*, so totally unfit for an infant's delicate stomach. Nowhere is this tendency to use alcohol with infants more prevalent than among the laboring classes, and as a consequence nowhere do we find more unhealthy and diseased children.

It is natural for the poor weary mother, who has never been better taught, to use a remedy which she knows will quiet the little fretful, hungry child so quickly, and give her time to rest her own weary body, but if she suspected the danger that lurked in the dose her maternal love would soon cause her to look for some other less hurtful remedy.

From whatever standpoint we view this subject the conclusion is forced upon us that there is a great work for some man or set of men to do. We live in an age when the amelioration of the great and pervading ills of society is uppermost in the minds of all right-thinking men. As has been well said, we take under our care and medical treatment the man who is insane by inheritance or otherwise, however violent he may be, however dangerous to the community, and placing him under the most favorable conditions for treatment, we extend to him the chance of recovery, through kind treatment, skillful medical supervision and freedom from all hurtful influence. We take the homicide and protect society from his dangerous tendencies, and, under proper restraint, allow him the opportunity of reform. We gather together the deaf, the dumb and the blind, and by kind and tender teaching reach the intellect through other channels than those of hearing and sight, and make him a valuable citizen, capable of contending with his fellow-man in all the pursuits of life, but the poor man who inherits this curse of drunkenness we treat as a criminal and punish, as if he alone was in fault, and as if his will power was as strong as the strongest.

"We pass laws upon laws to control the traffic in liquors, laws prohibitory and high license, laws for the punishment of those who sell and those who buy, laws under whose sanction the drunkard is thrown into dirty guard-houses to wallow in filth and exposed to disease and inhuman treatment, laws under which officers may brutally club and injure for life the miserable wretch who may fall under his power," but nothing has been attempted by the State whereby good, wholesome protective care may be extended to those who have become victims of this terrible malady, it may be by inheritance or causes not under their own control.

Looking, then, at this matter from this standpoint, it would seem that the time has arrived when our laws should undergo a change and these men be given a chance of escaping from the toils which have been cast around them.

In writing this paper I have used the thoughts, and often the language of others, without proper acknowledgment, from the fact that the paper was not written originally for publication, and as time elapsed I have forgotten to whom credit is due; still I did not feel that I should withhold it if it might be of service in calling public attention to a subject which has been too little thought of in the light here presented.

SELECTED PAPERS.

WESTERN NORTH CAROLINA AS A HEALTH RESORT.

By James Graham, M.D., Philadelphia.

The frightful mortality from the different forms of phthisis in the northern section of our country proves only too conclusively the inefficiency of the medical treatment of the disease. Each winter has witnessed a larger migration to our Southern States of sufferers from this and other diseases which our rigorous climate affects injuriously; and as, with our progressive people, supply follows close upon the heels of demand and frequently runs far ahead of it, winter resorts have become so numerous that the physician is now able to show as much judgment in selecting a place as he is in choosing a remedy for his patient.

Western North Carolina has a climate peculiarly adapted to some classes of cases and unfitted for others. Its location makes it easily accessible to our largest centres of population, as good lines of railroad enter it, both from the Northeast and also from the Northwest, and traverse it, so that almost any part can be reached by a day's journey by stage. The extreme western portion of North Carolina is about three hundred and fifty miles west of the Atlantic Ocean, and contains a plateau between the Blue Ridge and Alleghany Mountains. This is crossed by seven ranges, and extends from southwest to northeast for two hundred miles from the thirty-fifth degree of North latitude. Its Northern and Southern portions are narrowed by the nearer approach of the mountains which border it. It varies in width from fifteen to sixty-five miles, and includes some six thousand square miles of territory. Most of this territory is occupied by immense forests of almost every variety of tree, with valleys varying in altitude from fifteen hundred to four thousand feet above sea-level. It contains the highest peaks in the United States east of the Rocky Mountains, more than fifty of them being more than six thousand feet high. The Blue Ridge is the watershed of the country, and the plateau is traversed by many rivers.

The temperature of this region varies considerably in different years and is liable at all seasons to sudden changes. The late evenings, the nights and the early mornings are cool in summer and cold in winter, while the middle of the day is hot in the former and warm in the latter season. Frequently a bright sunny day will be followed by a cold damp one.

The sensory nerves of a sick man are a better, though less scientific, indicator of the weather than the thermometer and barometer; and if, as he certainly should, he leads an out-door life, the matter of clothing will be a perplexing one to him. Flannel or silk underwear, heavy or light, according to the season of year, is the most suitable, as it will tend to prevent a sudden chilling of the surface of the body; and as at these altitudes one perspires easily on taking active exercise, it will also be found the most comfortable on account of its absorbent qualities. A patient should also be provided with convenient outside wraps, to be worn as required.

The soil in many parts of Western North Carolina contains a red clay, which makes the roads sticky and muddy for days after a heavy rain or snow. These drawbacks are largely overbalanced by the invigorating character of the atmosphere. It affects him like a stimulating draught; it revives his courage, tempts him to exercise, lessens the feeling of fatigue that follows, and, provided he has followed the dictates of his feelings and taken out-door exercise, he is astonished at the keen appetite he enjoys and his freedom from dyspepsia.

We may infer from the foregoing that this mountainous country is no place for persons with cavities in their lungs, or for patients with low vitality from any incurable disease, or for those afflicted with laziness. In the early stages of phthisis, on the other hand, when the patient has still considerable bodily vigor, in convalescence from acute diseases, and for those who are worn down by over-work or worry, this elevated peninsula of the North projecting into the South offers a temperate, bracing climate during the autumn, winter and spring, which is much superior to the enervating climate of the warmer lowlands of the South. When, however, the patient cannot or will not take out-door exereise, then he should go further South, where he can remain at rest in the open air for a large part of the without suffering from the cold.

While this country has only enjoyed for the last few years a reputation as a Winter resort for Northern invalids, it has been a summer resort for sixty years for the families of the wealthy planters and merchants of the South For most of our patients requiring an elevated location in the summer months, the Adirondacks or the Alleghanies in Pennsylvania are preferable to the mountains of North Carolina; but the latter might offer a pleasant change, or even be more suitable for special cases. Here the Summer temperature will frequently run up to 90° in the middle of the day. but the nights are always cool enough to make a blanket comfortable, and there is almost entire exemption from those hot weather plagues—mosquitoes and flies.

Climate is not the only requisite in a health resort, pure water is good second; and here it can be found in abundance and of the best quality, and where—as is frequently the case—it is brought direct from the spring, the epicure and the critic are both satisfied. When we come to speak of the food, our praise has to be changed into condemnation, as it is bad, even for the South. In the first-class hotels it is probably equal to that supplied in hotels of the same class in the North; but everywhere else the Northern palate will fail to be satisfied, excepting in those houses—which are now numerous—that are kept by Northern men.

Scenery and objects of interest are also important factors in assisting convalescence of patients, and in these respects Western North Carolina is difficult to excel. From many of the mountains there are magnificent and extensive views, but from most of them the outlook is disappointing; for there is such an innumerable number of surrounding peaks, that when one ascends to the summit he sees nothing but a succession of mountain-tops, like billows of the ocean. Frequently, however, one side of the mountain will be so precipitous that the view from its brink will be grand and imposing. But, if the views from the mountains are not all that could be desired, the rivers and streams must ever be the delight of the lovers of the beautiful. The Little Tennessee, the Tuckaseigee, the Nantahalah, the Ocona Lufty, the French Broad, north of Asheville, and especially at the Tennessee border line—these, with their noisy, rapid currents, dashing over rocky beds, through narrow valleys with precipitous sides many hundreds of feet high, afford a never ending delight to the poor invalid. Then the primitive inhabitants one meets, their peculiar dialect, their strange customs and their miserable log huts, make a progressive Northern man feel as if he had been wafted into a foreign land.

Asheville, the metropolis of Western North Carolina and its railroad centre, is as progressive as a Western town. It has a population of about ten thousand, with electric street-cars, electric lights, underground drainage, banks, telegraph offices, large stores, abundant hotel, boarding and lodging-house accommodations and an unfailing supply of pure spring-water, flowing through the town from a huge tank situated high up on the mountain. Its principal hotel, "the Battery Park," is charmingly located above the level of the rest of the town, and is without a rival in the State or a superior in the whole South. But Asheville was not built as a health resort. It is situated on a large open space at an altitude of 2,250 feet above sea-level, and is altogether unprotected on the North and West; whereas, on the South-east, where it should be open to the cool breezes of summer, it is hid behind a mountain range; consequently the cold Northwest winds sweep it in the winter, and in the summer it is often oppressively warm.

Hot Springs, thirty-seven miles north of Asheville, is beautifully located in the valley of the French Broad, at an altitude of 1,326 feet. It has an excellent, large hotel, attached to which are the warm springs; these have a temperature of from 90° to 100°. They are enclosed in two frame buildings; one of these contains a swimming-tank, where ladies, gentlemen and children bathe together; in the other are separate, marble-lined pools, with all the accessories to a most luxurious bath.

Waynesville, on the Western North Carolina Railroad, thirty miles west of Asheville, is a thriving town at an elevation of 2,756 feet, and is admirably located for a summer resort. A few miles to the west of it is the majestic Balsam Range of mountains, the tops of which are black from the thick foliage of the trees.

Forty five miles further west, on the same railroad, is Bryson City, the county-seat of Swain. It is a town of three or four hundred inhabitants, lying in a beautiful valley on the banks of the Tuckaseigee. It has a good hotel, kept by a Michigan family, and numerous boarding-houses. There are abundant and easily accessible springs on the adjacent mountains, but it gets its water supply from wells. Its elevation is 1747 feet above sea-level, and with a pure water-supply it would be a desirable winter resort. Ten miles away, on the Ocona Lufty river, is an Indian settlement and training school.

Franklin, on the Little Tennessee, is twenty miles south of the railroad, has three or four hundred inhabitants, is in a rich agricultural country, and is at an altitude of 2,141 feet. The scenery is uninteresting and the water-supply objectionable.

The Highlands, a new resort settled by Northern people, is on the main stem of the Blue Ridge, at an elevation of 3,817 feet. It has an admirably-kept hotel. Satulah and Whiteside mountains are easily accessible, and, being isolated peaks, afford extensive views. Highlands and Oweacaluco Falls are within short distances. The Highlands are a delightfully cool and popular resort in the summer, but the water is obtained from wells; as it is situated on the top of the Blue Ridge, showers of rain are of frequent occurrence.

Twenty miles south of Asheville, by rail, is Hendersonville, a prosperous town of 1,200 inhabitants, built at an elevation of 2,167 feet. Three miles away and charmingly located is Flat Rock, the oldest of these summer resorts.

Thirteen miles east of Asheville the railroad crosses the Blue Ridge, and half-way down its eastern slope passes "The Round Knob Hotel," 2,000 feet above sea-level. It is in the neighborhood of the highest peaks, is a summer hotel, and has an abundant supply of the best water, and also a more than abundant rainfall.

These are only a few of the resorts of Western North Carolina; "the woods are full of them," and each one claims to be the best—not of the State, but of the United States.

A pleasant and beneficial way of changing one's banishment into a vacation is to take a tramping or riding tour. Saddle-horses can be hired at five dollars a week. A plentiful supply of pockets will carry all the essential luggage, and, if desired, a trunk can be forwarded by express from town to town. It would be advisable to spend the first week at, say, Asheville, taking a walk each morning and afternoon. After this preliminary training, with a map and compass in the pocket—but no firearms, as only honest, innocent and hospitable people will be met—you start forth, being careful not to attempt too long walks at first. Any house you stop at will provide you with dinner, and also put you up for the night. A request (not a hint) for chickens, eggs butter and milk may supply you with a palatable meal; but if not, your appetite will show its quality and edge by feasting on fried pork, saur kraut, hot corn-bread, with molasses, and black coffee; the stomach will digest it as easily as it would a meal at home that had been ordered by the doctor and prepared by the nurse. As there will probably be only one room in the house, the guest will occupy it as a bedroom in common with the host and his family. On account of the difficulty of getting an abundance of nourishing food, and as such a supply is so important for an invalid, it would be advisable, when possible, for the patient who is taking this tramp, to stop over-night at a town where reasonably good fare can be obtained.

The most important fact in regard to this country is that, owing to the cheapness of living, the thousands of the working classes who are excluded by the expense from a prolonged stay at most health resorts, can here live more cheaply than they could at home. Boarding at farm-houses, off the line of the railroad, can be obtained at from five to seven dollars a month. To a Northern man it would be wretchedly poor living, but if he were willing to pay ten dollars a month, the fare would probably be found satisfying. For many consumptives nothing but a permanent change of climate is of any avail, and frequently such a change is required by the entire family. If their financial resources are limited, Western North Carolina offers them peculiar advantages. Building material is plentiful and cheap, eligible locations are innumerable and can be bought for a trifle, and with, in the winter months, chickens selling at eight cents a piece, eggs at eight cents a dozen, and in season an abundance of delicious fruit, worth so little that it is almost given away, a family could be provided with every comfort, be surrounded by the grandest scenery, breathe the most invigorating air, and be exposed to no extremes of temperature at any season of the year. These advantages are so numerous that the probable result will be, in the course of years, that this section of country will be inhabited mainly by Northern invalids and by those who follow in their train.—*Medical and Surgical Reporter.*

THE Medical Department of Tulane University of New Orleans shows by its Catalogue, just received, a class of medical students numbering 262, besides 40 M.D's. We did not see the names of any from North Carolina, but we think our young men who live on the southwest border of the State could not do better for a thorough education than at the Tulane.

LAPAROTOMY FOR PERFORATING TYPHOID ULCER.

By N. Senn, M.D., PhD., of Milwaukee, Wisconsin.

The following case is reported as an addition to the as yet meagre statistics of laparotomy for perforating typhoid ulcer:

C. H., male, aged 22, admitted into Milwaukee Hospital March 31, 1889.

History.—Patient has been under treatment for the past three weeks for extensive bronchitis. He was never confined to his bed, but came to my office two or three times during the above period. His temperature was never over 101° F. There was complete loss of appetite, but no symptoms pointing to intestinal disturbance. March 31st, visited at his home. Three days ago he had an acute attack of pain in the left iliac region, followed immediately by vomiting, which has since then continued and has latterly become stercoraceous. During this time there has been absolute constipation notwithstanding repeated doses of castor-oil, administered by his friends, which only aggravated his symptoms. Abdomen was found very tense, tympanitic throughout except over the left iliac region, where dullness was present and exceedingly tender on pressure. Liver dullness displaced upward. Patient collapsed, pale, and pulse 140. Stimulants per rectum ordered.

Probable diagnosis, volvulus with obstruction.

March 31—He was removed to the Milwaukee Hospital for laparotomy. Vomiting still continues, and in addition to the symptoms of yesterday a cracked-pot resonance, on percussion to the right of the area of dullness. Considerable fecal-colored fluid removed from stomach by siphon irrigation. Stomach irrigated with one-third per cent. solution of salicylic acid. Two ounces of brandy administered by rectal injection and one-one-hundred-and-twentieth grain of sulphate of atropia hypodermically. Chloroform as anæsthetic on account of the bronchitis. Temperature of operating room 90° F. Abdomen opened by a median incision, four inches in length, extending downward from one inch below the umbilicus (subsequently enlarged upward four inches). The livid, over-distended intestines immediately bulged into the incision at points covered with plastic lymph. Manual exploration of abdomen with negative result. Evisceration necessary to determine the seat of obstruction, during which the bowels were caught in and kept covered by warm aseptic compresses. A number of loops of the upper portion of the ileum were found enlarged twice the size of the remaining portion of distended intestine, rotated on the mesenteric axis one complete turn from left to right. Volvulus corrected.

Below this point the intestine was found over-distended, and while withdrawing for examination fluid feces escaped through the abdominal incision with a sudden gush, coming from the left iliac fossa and in quantity about one pint. Intestinal loops showed large and thick patches of plastic lymph, especially the coils removed from the pelvis. A few minutes were spent in searching for the perforation, during which preparations were made for hydrogen gas insufflation for the purpose of locating the perforation. A leakage was accidentally discovered taking place through a small perforation in the centre of a large membranous patch at a point six inches above the ileo-cæcal valve. The opening was located on the convex side of the bowl nearly opposite the mesenteric attachment, surrounded by a gangrenous patch, oval in shape and irregular in outline, one-half inch in length and one-quarter inch in width. The plastic lymph was removed as completely as possible, the gangrenous portion turned inward and completely buried by eight interrupted Lembert sutures, embracing the peritoneum, muscular and submucous coats, a procedure which narrowed the lumen of the bowel to one-half its normal size.

Examination of the intestine for some distance above and below as far as the ileo cæcal valve revealed no additional perforations.

During the whole period that the abdominal cavity had been open, two irrigators, one on either side, were employed for flushing the abdominal cavity with a one-third of one per cent. solution of salicylic acid at the temperature of the body—the glass tips being placed alternately in the lowest part of the pelvis and lumbar regions.

On attempting to replace the intestines within the abdomen, it was found to be impossible on account of the great distention; consequently that portion involved in the volvulus was sought for and an incision made in its centre on the convex side, one inch in length, and a considerable quantity of fluid feces, but no gas, escaped. The incision only succeeded in emptying a limited portion of bowel, as all peristaltic action was completely suspended. Three feet of intestine, on either side of the incision were completely emptied by the pouring-out process, viz: seizing the highest loop and raising it, thus pouring contents from loop to loop until the incision was reached. The same process was repeated on the other side of the incision. The bowels were now cleansed by irrigation, incision closed by interrupted Lembert sutures, after which reduction was easily accomplished.

A large curved glass drain was introduced into the most dependent point of the abdominal cavity, and the external incision closed in the usual manner with the addition of three tension sutures, extending down to, but not including, the peritoneum. The fluid remaining in the abdominal cavity was now made to escape through the drainage-tube by turning the patient on his face. Antiseptic dressing applied and retained by strips of adhesive plaster embracing two-thirds of the body, covered with common cotton and bandage. Glass drain plugged with antiseptic cotton and instructions given to remove the fluid by aspiration from the drainage-tube every hour, and to wash out the tube with a physiological salt solution. Duration of operation one hour. Pulse about 160 and distinctly perceptible at the wrist.

After-treatment.—Foot of bed elevated; externally dry heat was applied, and stimulation by rectal injections of brandy. Vomiting ceased. Two evacuations of the bowels. Three hours after operation complete collapse supervened and death seven hours later.

Post mortem twelve hours after death. Diffuse septic peritonitis. The pathological conditions indicated that the inflammation commenced in the left iliac region at a point where the perforation had taken place. The loops of intestine which constituted the volvulus were only half as large in circumference as at the time of the operation. The remaining portions of the small intestine considerably dilated and intensely congested, with here and there patches of plastic exudation. The sutures in both places where the intestine had been sewed were buried underneath a delicate layer of plastic lymph which formed quite a firm adhesion between the coaptated serous surfaces.

A few ounces of bloody serum in the cavity of the pelvis.

Liver and spleen enlarged, parenchyma softened.

On slitting the ileum open from the ileo-cæcal region upward three elliptical ulcers were found below the point of perforation. Above the perforation no gross textual changes. Mucous membrane in lower portion of ileum in a state of catarrhal inflammation.

REMARKS.

The post-mortem appearances in this case leave no doubt that, notwithstanding the mildness of the febrile attack, the patient suffered from genuine typhoid fever. The bronchitis was such a conspicuous symptom during life that the presence of any serious pathological changes in the intestines was not even suspected. Perforation of one of the typhoid ulcers occurred at the end of the third week of the illness and gave rise apparently at first to circumscribed peritonitis, which limited the fecal extravasation, but did not prevent the extension of the septic inflammation. The symptoms of obstruction were undoubtedly due to the presence of the volvulus and to the suspension of peristalsis in that portion of the intestinal canal concerned in the septic inflammation. The volvulus was caused, without doubt, by the distention of the intestines and the arrest of peristaltic action, conditions produced by septic peritonitis.

So far the operative treatment of perforating typhoid ulcer has proved successful only in the case reported by Mikulicz, and in this instance there appears to exist no convincing proof of the correctness of the diagnosis in reference to the etiology of the ulcer.

This case illustrates forcibly the necessity of resorting to direct treatment of the perforation as soon as its presence can be diagnosticated, with a view of preventing the diffusion of the septic infection. If the operation is postponed until a general septic peritonitis has had ttme to develop, the prospects for a favorable result are almost *nil*, and under such circumstances the execution of the operation is attended by the greatest difficulties on account of the distended and paretic conditions of the intestines.

As a perforating typhoid ulcer must almost of necessity lead to a speedy fatal termination, abdominal section, suturing of the perforation and disinfection of the abdominal cavity present themselves as urgent, and the only rational indications in the treatment of such cases.—*Medical News.*

THE PRINCIPLES OF TREATMENT IN PULMONARY TUBERCULOSIS, WITH SOME OBSERVATIONS ON ITS ETIOLOGY.

By HERMANN M. BIGGS, M.D., Pathologist to the New York City
Health Department and Charity Hospital, Demonstrator of
Anatomy in the Bellevue Hospital Medical College,
and Instructor in the Carnegie Laboratory.

(Read at the annual meeting of the Alumni Association, Niagara University, Medical Department, April 9, 1889.)

I shall offer no apology for having chosen for my paper before this Association a subject so much written upon as that of pulmonary tuberculosis; for the prevention and treatment of tuberculosis seem to me subjects of such great importance. and so frequently regarded from an erroneous standpoint, that I feel more than justified in bringing them again before the profession.

The announcement by Koch, in 1882, of the discovery of the tubercle bacillus, and the demonstration by him of its essential etiological relation to this disease, marked the beginning of an important epoch in the history not only of this affection, but also of the infectious diseases in general. His observations have compelled a complete remodeling and reconstruction of our conceptions of this disease. Nevertheless, many of even the more progressive men of the profession have not yet been able to relinquish them for the new, and will not accept proven facts; or, if theoretically these facts are accepted, their practical bearing is but imperfectly appreciated. The importance of this subject cannot be over-estimated, and I believe that the *great sanitary question of the future has to do with the prevention and restriction of pulmonary tuberculosis.* From a practical sanitary standpoint no disease compares with this in its vast significance; nearly one-seventh of all deaths are due to it, and about one-fourth of those occurring during adult life are caused by it.

Koch has said that "so soon as the fact is recognized by physicians generally, that tuberculosis is an exquisitely infectious disease, the means of attacking it must develop themselves."

So thoroughly now has the infectious nature of tuberculosis been established, that it is unnecessary in this paper to state the grounds upon which we assume that the tubercle bacillus is the *cause*, and the *only cause*, of tuberculosis in the human being and in animals. In support of this assumption we will only say that there is perfect unanimity of opinion among all workers in pathology and bacteriology upon this question, and that this statement is accepted without reservation. It is not a question of opinion, but it is a thoroughly demonstrated and demonstrable fact.

However, in the consideration of the etiology of tuberculosis, assuming that the tubercle bacillus is the sole direct cause, there are yet some questions to be studied of great importance; and the first of these, perhaps, is heredity. We may assume with absolute certainty that tuberculosis is only very rarely, if ever, transmitted *in utero*. There is no recorded case of intra uterine tuberculosis in the human being, although Virchow is said to have been such a case. One instance has been reported in the calf by Johne, and there are other facts tending strongly to show that the disease is sometimes hereditary in animals. Possibly—we may say, perhaps, that probably—in some exceedingly rare cases in the human being, where there is general tuberculosis, or, perhaps, a tuberculosis of the female genital organs, the disease may be transmitted to the fetus *in utero*, but these cases are too rare to be of much practical importance In this connection it has been justly argued, and with much force, that if tuberculosis was often inhabited, it would manifest itself more frequently in early and middle life, whereas, in reality, it increases regularly with advancing age. The suggestion thrown out by Councilman, that possibly tuberculosis sometimes exists at birth—as in cases of primary joint and bone tuberculosis—but produces lesions that are as yet not recognized at all, or not recognized as tubercular, does not seem to us probable, and has no confirmatory facts in its support. The practical point is, that in at least ninety-nine (99) per cent. of all cases of tuberculosis, the infection occurs after birth, and the disease is not transmitted by heredity. This fact cannot be too strongly emphasized, for, even if an inherited *predisposition* to the disease is presumed, which we do not at all admit, and its transmission by heredity being excluded, the disease at once is thrown into the class of preventable diseases.

What, then, is the explanation of the constant occurrence of pulmonary tuberculosis in several members of the same family?

We have no difficulty in accounting for the occurrence of several cases of scarlatina or diphtheria in families; these diseases are certainly transmitted from person to person. Not less certainly is tuberculosis so transmitted.

It has been frequently suggested that the occurrence of pulmonary tuberculosis in the children of tubercular parents is due to the transmission, not of the disease itself, but of a predisposition to the disease, viz: the transmission from the parents to the offspring not only of tissues with a resisting power that is below the normal, but of tissues that are also especially susceptible to the tubercular virus, so that when exposure to infection occurs, as it inevitably must occur, the tubercle bacilli find unusually fertile soil for their growth. This is true in only a very limited way. The offspring of delicate parents, whether they are tubercular or not, as a rule, are less robust than those of strong and healthy individuals. The children have less resisting power, and are more easily affected by the action of noxious influences of all kinds; this is certainly often true in the case of children of tubercular parents. There is, however, no special susceptibility that is transmitted, but simply a peculiar delicacy of constitution, that, as has been said, shows less resisting power when exposed to the action of any form of noxious influence, including the tubercle bacillus. It is the absence of strength, and not the possession of unfavorable qualities, that is transmitted. I think, however, the largest factor in the production of such series of cases is not this inherited delicacy of constitution, but it is their constant exposure to infection with the tubercle bacilli, under the most favorable conditions, from the earliest moments of life. With the existence of tuberculosis in the parents, so that *there is constant exposure* to infection, there almost certainly comes a time when from some other cause—perhaps poor or improper food, or disturbance of digestion, with mal-nutrition, or an attack of some acute infectious disease, such as measles or whooping-cough—the local or general resistance of the tissues of the child is so reduced that the child becomes susceptible to the bacilli, which it from time to time is receiving from one or both of its parents. These may be received not only in the inspired air, but also in food, or in the milk from tubercular cows or nurses. The relations also usually obtaining between children and parents, and especially between children and their mother, are of that close and intimate nature especially favorable to the transmission of such disease by direct contact.

We may premise a little now in saying that not only are the discharges from cases of tuberculosis infectious, and the principal source of infection, but that they are the *only* source of infection. As to the avenues of infection, in by far the largest proportion of cases, infection takes place through the respiratory tract. Occasionally pulmonary tuberculosis is secondary to primary disease of some other organ, as the intestines, genito-urinary track, lymphatic system or bones and joints; these cases, however, form a comparatively small proportion of the total number.

The question then arises, What are the products that contain the tubercle bacilli, and how do these become the means of infecti n? That the tubercle bacilli are present in large numbers in the sputum of most cases of pulmonary tuberculosis, has been abundantly proved; further, that they, or their spores, are present in all tubercular processes and in the discharges from these, has also been often demonstrated. The sputum and these discharges will produce tuberculosis in susceptible species of animals, when introduced in large enough quantity in any manner into the tissues of such animals. The entrance may be through the respiratory or alimentary tract, or by intra-peritoneal inoculation. The experiments to show that tuberculosis may be produced in animals by causing them to breathe air impregnated with dry and pulverized tubercular sputum, or atomized sputum, or by seeding them with matter containing tubercle bacilli, have been so numerous and so many times repeated, that it seems scarcely necessary to refer to them. The same is true of the intra-peritoneal inoculation of animals with such matter. The disease may be produced also quite as readily, in the same manner, by the substitution of cultivations of the tubercle bacilli for the sputum. A proof that the deductions drawn from the inhalation experiments on animals also hold true with regard to man, is afforded by the remarkable example reported by Schweninger, of the possibility of infection of man when placed under the same conditions in which animals are infected, i. e., by impregnating the air with the tubercle bacillus. During the time that Tappeiner was conducting his inhalation experiments on animals, the servant who had charge of them, a very robust man of forty years of age, with absolutely no hereditary predisposition to the disease, and who had previously been perfectly healthy, notwithstanding the strong protestations and warnings not to enter, or remain, in the inhalation room disregarded these directions in order to show that this procedure was comparatively free from danger, and acquired in this way the same form of inhalation tuberculosis as had been produced in the dogs experimented upon. He died from tuberculosis after about fourteen weeks, and the autopsy revealed the presence of the same lesions as had been previously found in dogs that had been killed—only in him the disease was further advanced, corresponding to the longer period of time. Further careful experiments have shown that the *air expired* by patients suffering from pulmonary tuberculosis does *not* contain the tubercle bacilli, and is not infectious. This is easily explained, in view of the abundant experimental proof that bacteria are not taken up from moist surfaces or from liquids containing them. The perspiration does not contain them, and if the discharges from the alimentary canal at any time do contain bacilli, there is little chance of infection from these, excepting through the possible contamination of the water supply. This is so improbable as to be thrown out of the question. There remains, then, as the only important source of infection, the discharges from the air passages—that is, the expectoration; from this arises by far the greatest danger. While the sputum is moist it is comparatively innocuous, unless taken in with the food. If, however, it has been deposited on the floor, carpets, clothing, furniture, handkerchiefs, etc., or, in fact, anywhere outside of the receptacle intended for it, it soon becomes dried, and then later, perhaps, pulverized, becomes suspended in the air, in the form of dust, and then is taken in with the inspired air. It has been shown experimentally that this is what constantly occurs. In this manner favorable opportunities for infection of the air passages are presented.

The cases of infection of human beings from tubercular animals, although probably more numerous than is generally supposed, yet form a comparatively small proportion of the whole number. We cannot at all accept the conclusions of Brush, that the larger portion of the cases in the human being are due to infection from the bovine species. This mode of infection certainly accounts for but a small proportion of cases.

By far the largest number of cases of human tuberculosis are undoubtedly due to infection from other human beings affected with the disease. Some conception of the wide and general diffusion of the tubercle bacilli, where there are tubercular patients, may be gained from a review of the very careful and extensive experiments of George Cornet, published in the *Zeitschrtft für Hygiene.* He collected dust from the most varied points, in hospital wards, insane asylums, prisons, clinic rooms, private houses, and so on. where phthisical patients were present, or had been present, and from others which had been occupied for a longer or shorter time, or not at all, by phthisical patients. The dust was taken from parts where the sputum of patients could not have well lodged when expectorated, viz: from the side walls, back of the patient's head, from the mouldings and high-hanging pictures, from under the beds, and from the cross-pieces of the bedstead near the head, from dishes placed in the room to collect the dust, etc. This dust was used for the inoculation of guinea-pigs, which are very susceptible to tuberculosis, although they rarely suffer from this disease in the natural state. Complete precautions were employed in the inoculations. The results obtained were, in brief, as follows: A large proportion of the animals inoculated with the dust collected from the most varied points, in rooms of public institutions and private houses where there were cases of tuberculosis, developed the disease; and, on the other hand, where the dust wes taken from places where there were no cases of this disease, and had been none, the animals inoculated remained free. More than this, in rooms in private houses where there had been cases of phthisis, the dust was found to be virulent, not only during the occupancy by phthisical patients, but in some instances for a number of weeks after the removal of the patients.

Although these observations simply place on a sound experimental basis the opinions previously held by many pathologists, yet their important practical bearing is at once perceived. They imply that where there are cases of tuberculosis under the usual conditions, the dust surrounding them often contains tubercle bacilli, and persons inhaling the air in which this dust is suspended must, from time to time, inhale tubercle bacilli.

As we may exclude from our consideration for the present those cases where the disease results from infection through other channels than the air passages, we may sum up the whole question regarding this aspect of the etiology of this disease in a few words. Tuberculosis is not inherited—it is always the result of the action of tubercle bacilli. It has been abundantly proved by Koch that the tubercle bacilli cannot multiply outside of a living organism, human or animal (except when cultivated artificially); hence it follows, and there is no way of avoiding this conclusion, that when tuberculosis occurs in the animal or human organism, it is the result of infection by tubercle bacilli, derived directly from some other animal or human being affected with tuberculosis. When we remember what enormous numbers of the bacillus tuberculosis are present in the sputum, and what large quantities of expectoration are sometimes discharged for months and years by patients affected with chronic pulmonary tuberculosis, and that the bacilli, or their spores, retain their virulence for weeks and months after these discharges, we can readily understand that the opportunities and sources for infection with the tubercle bacilli may be constantly presented.

This brings us to the consideration of another phase of the subject. An almost casual examination of the observed facts at once arouses the conviction that, under natural conditions, something more than the mere presence of the tubercle bacilli is ordinarily necessary to produce pulmonary tuberculosis; for, so general is tuberculosis that, under the conditions found in modern civilized countries, every individual who has attained maturity must have been exposed at some time in life.

Tuberculosis is originally always a local, infectious disease, preceding the development of the local process there is usually, and perhaps always, a depressed condition of general vitality, or of the local vitality of the organs or tissues affected, which renders the individual susceptible to the disease. The relation of this local or general condition to the tubercular process, and its influence upon prevention and treatment, will be better understood after referring briefly to some points in regard to the transmission of the infectious diseases. It has been shown experimentally that all individuals, however susceptible the species or individual may be, yet possess a certain degree of immunity to diseases to which they may be subject; in other words, there is a definite relation between the specific virus, causing some infectious diseases (and probably this is true of all), and the tissue resistance of the individual. This insusceptibility varies with different individuals, and with the same individual at different times, and is largely dependent upon the intensity of the virulence of the virus employed, the amount of virus used, and the condition and surroundings of the individual experimented upon.

It has been found, in the case of certain of these diseases, that the other conditions being the same, the effect produced is directly proportionate to the amount of the virus used. If a very small amount is introduced subcutaneously, no effect follows the inoculation; if a somewhat larger amount is introduced, a local disturbance at the point of inoculation follows; and if a still larger amount is used, the characteristic phenomena of the disease are produced. In other words, the natural resistance of the individual to the disease in question must be first overcome by the size of the dose of the virus. We may represent this graphically by supposing that $x =$ the normal resistance of an individual to a given disease, and $y =$ amount of virus sufficient to produce the disease. These are both variable quantities; x varies with the individual and with time, condition, etc.; y varies with the individual susceptibility and with the intensity of the virus. It will be readily seen that immunity or increased susceptibility, or their equivalents, may be produced by variations in either x or y. The insusceptibility to any disease may be so great that under natural conditions the intensity of exposure to infection, or, in other words, the dose of the virus received, is not great enough to overcome this insusceptibility, and such individuals possess practically absolute immunity to the disease. Some persons have such an immunity to small-pox; but there can be no doubt that in such individuals this immunity could be overcome artificially, if it were possible to increase indefinitely the dose of the virus. Now, in a local parasitic disease, such as tuberculosis originally is, it becomes evident at once that any influence which diminishes the resistance of any organ or tissue that is exposed to infection, whether this influence is a local or general one, by just so much contributes to the production of the disease.

The depreciated condition of general health or lack of tissue resistance that usually precedes the development of tuberculosis, may be congenital or acquired, and it is because of the frequent development of tuberculosis, in some form, in those persons who have had transmitted to them at birth this condition, i. e., where there is a weak resisting power, that the disease has been so long considered hereditary.

But aside from this general condition of depressed vitality, that so often precedes the development of this disease, there may also be produced by various causes a local depression of vitality in some tissues exposed to infection that has the same effect. It is the combination of these two sets of conditions, general and local, that offers the best opportunities for the development of the tubercle bacillus. As an example of the development of tuberculosis under such conditions, we may instance the occurrence of tubercular joint disease in children after traumatism, when the depreciated state of general health preëxists. The traumatism produces the local depression which determines the site of the tubercular process.

It may be noted here that those diseases which are associated with some erosions of the mucous membrane of the smaller bronchial tubes, accompanied as these are with destruction of the ciliated epithelium covering the membrane, probably more strongly predispose to the development of pulmonary tuberculosis, than those affections which produce a general depression of vitality without any local disorder of this nature. Such eroded spots offer favorable points for the lodgment and development of the tubercle bacilli. The very frequent occurrence of this disease after measles and whooping-cough, is probably to be accounted for in this way, and not because of their producing any special or peculiar susceptibility to the disease.

The tubercle bacillus is the active cause of the disease. If introduced in large enough numbers, this will produce the disease independently of any other influence; but, under natural conditions, if no local or general depression of nutrition exists, the intensity of exposure to infection, or the number of tubercle bacilli received at any given time, is not sufficient to overcome the natural insusceptibility. When, however, the natural resisting power to the disease is lessened from any cause, the dose of tubercle bacilli that before proved insufficient, now results in the production of the disease.

Further than this, the same conditions exist later on, if the tissues possess a certain degree of vigor, and if the standard of nutrition is brought up to a certain level, they resist the multiplication of the tubercle bacilli and the extension of the tubercular process; this then becomes stationary or retrogressive. If, on the other hand, the vitality of the tissues is low and the conditions are favorable for the development of the tubercle bacilli, they find little resistance to their multiplication, and the disease rapidly extends. That this is exactly what occurs is shown clearly enough by the conditions found after death. In more than sixty (60) per cent. of the autopsies in the charity hospitals of New York, I have found, after death, in the lungs the evidence of a tubercular process that had existed at some time in life. This was manifested in the form of cheesy or calcareous masses, fibroid tubercles, or well-marked tubercular lesions. This observation conveys some conception of the alarming frequency with which this disease prevails, and how large a proportion of the human race become infected at some time in life. There is, however, another side—a bright side—brought out by these facts, which shows in the most unmistakable manner that tuberculosis does not tend to end fatally in all or in most cases; that it is not invariably an incurable disease, in the ordinary acceptation of that term; but, on the other hand, that in a very large proportion of cases the process early becomes stationary and retrogressive. I have found that this was the case in nearly fifty (50) per cent. of the instances of pulmonary tuberculosis, and that in every stage of the disease, up to the time when there were cavities in both lungs, with a large proportion of the upper lobe of the one lung converted into cavities, that the process may become stationary or retrogressive. The cavities cicatrize, or become surrounded by fibrous tissue walls; the tubercular masses become cheesy, or calcareous, and surrounded by a fibrous tissue capsule. We must bear in mind, in this connection, that the disease is no less pulmonary tuberculosis if there is a single nodule of a tubercular nature in one lung, than if both lungs are completely filled with tubercular lesions. In a large proportion of the cases where the disease became stationary, a small amount only of lung tissue had been involved, but in a few instances, as I have said, quite the reverse of this was the case. In many of these subjects the individuals had probably never been conscious of the existence of any serious pulmonary disease, but, at some time in life, as the result of some depressing influences, conditions favorable to the development of tubercle bacilli had been produced, the subjects had been exposed to infection, and a local tuberculosis had resulted. Later, the conditions had changed, the local or general state of nutrition had improved, and with this came a corresponding increase in the resisting power of the tissues; they no longer afforded favorable soil for the growth of the germs, and the disease early ceased to extend. These observations have an important practical bearing, for they show, in the most unmistakable manner, that in a large proportion of cases pulmonary tuberculosis tends to become self-limited, and that it is distinctly amenable to treatment. It only tends to end fatally of necessity where the amount of involvement of lung tissue is great.

The environment experiments of Trudeau bear out the conception of this disease just presented in the most complete manner. He found that if rabbits were inoculated with cultures of the tubercle bacilli, and were then placed under the most favorable conditions of life, they did not ordinarily develop the disease; but other animals, inoculated at the same time under precisely the same conditions, invariably developed the disease when placed under unfavorable conditions of life. The favorable surroundings in the one case afforded the animal a greater resistance and consequent immunity to such doses of the virus; but unfavorable surroundings in the others rendered the animals susceptible to the disease. These considerations give us the key to the whole subject of the treatment of tuberculosis.

For, keeping in mind these two etiological factors—first, the tubercle bacillus, and second, the conditions that render the tissues a favorable site for their development—the principles of treatment become at once clearly defined.

As regards the tubercle bacillus, it becomes at once apparent that in all forms of internal tuberculosis, when the diseased tissue cannot be removed surgically, treatment directed specially toward the parasite (i. e., germicidal treatment in the ordinary sense) is futile. From the nature of the pathological changes that occur, and from the position of the bacillus in the diseased tissues, it becomes evident that no germicidal agent can be brought directly in contact with the organism, and we may dismiss at once from our thought any idea of accomplishing any direct result by any form of antiseptic or germicidal treatment, whether it comes from the internal administration of germicidal agents, or antiseptic sprays, or inhalations, or injections, or gaseous enemata. Any apparent results that are obtained by these means are indirect at best. They divert our attention from the only rational line of treatment, and fall far short of accomplishing the object for which they are intended. They have not one single physiological or pathological fact for their basis, and are founded on a kind of a sentimental system of bacteriological empiricism. It seems to me simply deplorable that such a method of treatment as that of rectal injections of sulphurated hydrogen should have received, for a time, such wide recognition by the profession in these days of scientific medicine.

If we look to the second factor in causation, viz: diminished tissue resistance, the prospect becomes at once bright. We find the treatment based upon known facts in regard to the pathological anatomy and pathogenesis of this disease, to be in perfect accord with the deductions drawn from clinical experience. Any method of treatment that tends to improve the condition of general nutrition also tends, by just so much as it increases the resisting power of the tissues, to limit and check the extension of the disease. Further, any method of treatment that raises the local vigor of the organs or tissues affected, tends in the same way to increase the resisting power of the tissues, and so tends to check and limit the extension of the tubercular process. All medicinal methods of treatment that have withstood a long and severe test of clinical experience, come under one of these heads.

The treatment is thus narrowed down to those measures, for the most part hygienic in nature, which aim to bring up the standard of general nutrition to the highest possible point. In conjunction with such means may be sometimes used those that influence in the same way especially the vitality of the organ affected.

From this standpoint, inasmuch as the susceptibility may be inherited or acquired, the question of prophylaxis is a most important one; for it is manifest that the chances of the patient susceptible to tuberculosis are vastly better before than after he has become infected with the exciting cause of tubercular changes. If we are dealing in any case with an inherited or acquired susceptibility, the object of prophylaxis is to place the patient in surroundings free from infective matter, in an a-tubercular atmosphere, and then to remove, if possible, the diathesis. As regards the prevention of infection: Recognizing the many avenues of infection and the fact that, although it is certain that the parasite does not live any stage of its existence outside of the body of animals, yet the spores are capable of withstanding successfully, for a considerable time, conditions averse to their development; recognizing these facts, the greatest consideration must be given to the following points: The sputum of phthisical patients should be at all times thoroughly disinfected, germicidal solutions in glycerine and water should be constantly standing in the receptacles for expectoration. All handkerchiefs contaminated with such infective matter should be placed in a solution of carbolic acid (1-20) before being washed. All cloths and rags so contaminated should be burned, and all clothes containing infective matter from tubercular ulcers of skin or intestinal discharges from cases of tubercular enteritis, etc., should be treated in like manner. The attendant should not occupy the same bed as his patient, nor should he live continuously in one room if it can be possibly avoided. In the case of husband and wife this rule should certainly be enforced. There is stronger evidence to support the belief that tuberculosis is sometimes communicated *per coitus* through the genital organs. Infants should not be suckled by tuberculous nurses, nor should they sleep with tuberculous parents. Rooms occupied constantly by tubercular patients should be frequently thoroughly cleaned and disinfected.

To remove the susceptibility, and to limit the extension of the tubercular process when once established, the measures of treatment may be considered under the heads: Atmosphere and climate, food, exercise and occupation, baths and drugs.

These subjects it is not necessary to consider in detail.

As to the prevention of those cases due to infection of human beings from animals, it is clear that there is but one method, viz: governmental inspection of dairy cows and of animals slaughtered for food, the destruction of all tubercular animals and the rigid exclusion of the meat for purposes of food. Brush suggests that the use of tubercular animals for breeding purposes and the in-and-in breeding of any of the bovine species (which especially tends to develop tuberculosis), be prohibited by law. To show the frequency of the disease in cattle, it may be noted that competent and conservative veterinarians claim that from ten to fourteen per cent. of the thorough-bred Jerseys are affected with tuberculosis.

The points to which I had especially desired to call your attention are: That the question of the prevention and restriction of tuberculosis is of vast importance; that tuberculosis is a purely infectious disease; that it is not frequently transmitted by heredity; that it belongs to the class of strictly preventable diseases; that the sputum is the chief agent of transmission of the disease, and that, consequently, great care should be exercised in its disposition. Further, that under natural conditions of exposure to infection, there is usually necessary some inherited or acquired reduction of tissue resistance—which is the result, as a rule, of a low standard of general nutrition; that the disease does not always tend to end fatally, but that, on the contrary, in at least fifty per cent. of the cases of pulmonary tuberculosis, the disease early becomes stationary and retrogressive; and, finally, that the only rational measures of treatment, so far as the tubercular process itself is concerned, are those that tend to raise the standard of general nutrition to the highest possible point, and so help to increase tissue resistance.—*Buffalo Medical and Surgical Journal.*

SACCHARIN.—The taste of saccharin combined with soda is a substitute for sugar, but to a refined and delicate taste it is far from being pleasant. A mixture with glycerine and some flavoring would be a necessary addition for most persons. One grain of saccharin or more of bicarbonate soda is a good proportion. If one wished to get a distaste for sugar, it could be easily obtained by using saccharin.

OUR MEDICAL SCHOOLS PRIVATE INSTITUTIONS.—To all intents and purposes the medical schools of the country are private organizations, managed in the interest of the professors, who, with scarcely an exception, have direct pecuniary interests in the size of the classes. The greater the number of students and graduates, the larger the fees and the higher the income of the teachers. The running expenses and the interest on the moneys expended for the teaching-plan are the first call, after which the balance is divided. These chartered corporations are wholly irresponsible, without supervision by the State, the profession or the public. It would not be difficult, without fear of just rebuke, to bring a railing accusation against them for persistently acting in their own, and not in the interests of the public. But the time has passed for this. Yet it is surprising to think that so many men, distinguished in every way in their profession, cultured and liberal, still cling to, and even advocate, the advantages of an irresponsibility which has made the American *system* of medical education a by-word among the nations.—*Dr. Osler, in his address in Baltimore April 24th,* 1889.

EDITORIAL.

THE NORTH CAROLINA MEDICAL JOURNAL.

A MONTHLY JOURNAL OF MEDICINE AND SURGERY, PUBLISHED IN WILMINGTON, N. C.

THOMAS F. WOOD, M. D., Wilmington, N. C., } Editors.
GEO. GILLETT THOMAS, M. D., " }

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WILLIAM THOMAS ENNETT, M.D.

Death has just ended the episode which brought so much sorrow to the profession assembled in the Twenty-sixth Annual Meeting at Elizabeth City. The floods had interrupted travel so that groups were cut off in this town and that unable to reach their destination; darkness and threatening of greater floods hung depressingly upon those who had reached their destination, and, added to all this, came the shocking intelligence that our President, while on his way to the meeting, full of pleasurable anticipation of the great occasion of his life, had been stricken down, and so seriously that he had to be carried back to his home in Wilmington. The sympathetic response of the Society to our suffering friend was speeded to his bed-side, where it was received very gratefully, and during all those hours of sadness and suffering his heart was with the brethren assembled in Elizabeth City. The Medical Society of North Carolina had not a more loyal member than he.

Dr. Ennett was born at Stump Sound, in Onslow county, November 19th, 1839. He entered the University of North Carolina in 1858, and in 1861, moved by the spirit of patriotism which pervaded the students, at the first alarm of war he left the University without waiting for permission, and assisted Sheriff Redd in raising a company among his friends and neighbors for the term of the war. He was made lieutenant in the company which was afterwards Company E of the 3d North Carolina Infantry, commanded by Col. Gaston Meares. His regiment went into Camp of Instruction at Garysburg, at which place, after passing through the dangers of many battles, twenty-eight years later, the accident befel him which hastened his death on the 15th of June.

Upon the resignation of Capt. Redd, Lieutenant Ennett was made Captain, and finally, in the spring of 1864, was promoted to be Major. He served with fidelity in many of the hard-fought battles of the war, receiving serious wounds in that memorable charge on Sunday morning in the battle of Chancellorsville. Recovering from his wounds, he served in the campaign of the Wilderness, against Grant, and was captured on the 10th of May at Spottsylvania, while his gallant regiment was contending for the traverses in the "horse-shoe" or "bloody angle," with nearly the whole of General Edward Johnson's Division.

He was called upon during his captivity to endure a trial for his country; he, with several of his brother officers of Wilmington and others, being placed under our own guns in Charleston Harbor. as an act of retaliation on the part of the enemy.

He was returned to his own regiment in the fall of 1864, in the Valley of Virginia, to take part in the trying retreat from Cedar Creek, during which he contracted articular rheumatism, which ever afterwards impaired his health. Major Ennett was second in command of the then consolidated 1st and 3d North Carolina Infantry in the memorable retreat from Petersburg to Appomattox. Lieut. Col. Parsley having been killed near Sailor's Creek, only a few days before the surrender, Major Ennett succeeded to the command. As temporary commander of Cox's Brigade on the 9th April, that brigade fired the last volley by the Army of Northern Virginia.

Major Ennett had received no military training, except such as the great bulk of our Southern Army got by actual experience. His zeal for the honor of his native State was excessive, and it was that which made him a brave and tenacious soldier, and as such he was esteemed by his men and superior officers.

Returning home to find his fortune gone, he entered upon the study of medicine, graduating from the University of Maryland in 1867. He established himself in practice near Rocky Point, and afterwards at Burgaw, finally moving to Wilmington in April of this year, just before the meeting of the Medical Society.

Dr. Ennett's record in the Society is well known. He was ever faithful to her interests, rarely absent from the annual meetings. As a citizen, he performed his duty patriotically, as a friend, he was constant and tenacious. As soldier, citizen, physician, friend, he filled the measure of his duty, dying in "the communion of the Catholic Church; in the confidence of a certain faith; in the comfort of a reasonable, religious and holy hope; in favor with God, and in perfect charity with the world."

Mrs. Ennett and their three daughters survive him, and to them we tender our sincerest sympathy.

THE NEXT CENSUS.

The following Circular is of great interest to the whole country. It is within the power of the medical profession to render great service, if they will, by keeping faithfully the record in the Physician's Registers sent them. The returns from the census of 1880 were poor, giving great evidence of the indifference of physicians, but we trust that the profession now realizes, as it never did before, the value of correct statistics, and we bespeak for the officers in charge of the census the diligent record asked for in this Circular:

To the Medical Profession:

The various medical associations and the medical profession will be glad to learn that Dr. John S. Billings, Surgeon U. S. Army, has consented to take charge of the Report on the Mortality and Vital Statistics of the United States as returned by the Eleventh Census.

As the United States has no system of registration of vital statistics, such as is relied upon by other civilized nations for the purpose of ascertaining the actual movement of population, our census affords the only opportunity of obtaining near an approximate estimate of the birth and death rates of much the larger part of the country, which is entirely unprovided with any satisfactory system of State and municipal registration.

In view of this, the Census Office, during the month of May this year, will issue to the medical profession throughout the country "Physician's Registers" for the purpose of obtaining more accurate returns of deaths than it is possible for the enumerators to make. It is earnestly hoped that physicians in every part of the country will coöperate with the Census Office in this important work. The record should be kept from June 1, 1889, to May 31, 1890. Nearly 26,000 of these registration books were filled up and returned to the office in 1880, and nearly all of them used for statistical purposes. It is hoped that double this number will be obtained for the Eleventh Census.

Physicians not receiving Registers can obtain them by sending their names and addresses to the Census Office, and, with the Register, an official envelope which requires no stamp will be provided for their return to Washington.

If all medical and surgical practitioners throughout the country will lend their aid, the mortality and vital statistics of the Eleventh Census will be more comprehensive and complete than they have ever been. Every physician should take a personal pride in having this report as full and accurate as it is possible to make it.

It is hereby promised that all information obtained through this source shall be held strictly confidential.

Robert G. Porter,
Sup't of Census.

[So far the promised registration books have not been received, and July is near upon us.—Eds.]

THE SUCCESSFUL COMPETITOR FOR THE APPLETON PRIZE.

Dr. W. H. H. Cobb, Jr., of Goldsboro, having obtained the highest rating in his examination before the Board of Examiners, is entitled to the $25 prize awarded by Messrs. D. Appleton & Co.

REVIEWS AND BOOK NOTICES.

A HANDBOOK OF THERAPEUTICS. By Sydney Ringer, M.D., Professor of Principles and Practice of Medicine in University College, etc., etc. Twelfth Edition. New York: William Wood & Co., 56 & 58 La Fayette Place, 1889.

This book is an old favorite, and having reached its twelfth edition, shows no signs of decadence, but rather a freshness, which makes a perusal of its pages very pleasant.

The author has inserted in this edition a brief account of disease, judging rightly that in these times it is needed, when the preponderance of instruction is given to physical signs, and "too little heed to the detection and appreciation of symptoms, objective and subjective." He thinks that physical signs are soon learned, whilst it requires a longer time, more patience and more discriminating observation to appreciate the meaning and estimate the value of symptoms.

The signs discernible by the tongue are first considered, then the diagnostic value of the quality of the pulse, the skin, temperature in health and in fever, chronic fever, the effects of cold on the body, the cold bath in fever, balneology in general, poultices and fomentations and the use of ice, enemata, acupuncture, irritation and counter-irritation, brings us up to the consideration of the individual substances and their therapeutical value. Most of the articles treated, and they are not very numerous—about 250—are as concisely treated as possible, chiefly from the practical standpoint. Originality may be said to be the characteristic of this book, and plainness of statement its great merit.

Amidst the otherwise fresh material, it sounds a little antiquated to read, "Dr. Horace Green *injects* a solution of nitrate of silver into the trachea is asthma," since Dr. Horace Green has been gathered to his fathers so long that but few of the present generation can recall the stir he made in his day, and how he demolished the opposition of Dr. Valentine Mott.

Ringer's Therapeutics is convenient in size, has an index of subjects and an index of remedies, and is sold at a low enough price to enable one to enjoy the luxury of the new editions.

A MANUAL OF DISEASES OF THE EAR FOR THE USE OF STUDENTS AND PRACTITIONERS OF MEDICINE. By Albert H. Buck, M.D., etc. Pp. 419.

We have had this volume before us for some days, and a careful examination of it impresses us with its value. It is divided into fifteen chapters, concluding with an appendix, an Antomical and Physiological Sketch of the Ear and a general index.

The first chapter, on General Diagnosis—the tests of the hearing power, the use of the tuning-fork, the use of ear specula and reflectors and ear syringe—is practical and clear, although it never has been made clear to the writer why a syringe of the Davidson pattern—the Alpha continuous-flow, for instance, is not better adapted than a piston syringe. It can be worked with as gentle a stream as needed in the most delicate cases, and is uot subject to work hard or inefficiently. We believe that aural surgeons do not approve of them: Diseases of the external auditory canal cover 64 pages, of the middle ear 150 pages. All that is practical for the general practitioner is plainly described, with a sufficient number of illustrations to add value to the text.

This department of medicine is one much neglected by the profession, but every medical man ought to have diagnostic skill enough to know when his patient needs the skill of a specialist, if no more, and with such a volume as this, he will have a safe and efficient guide. Dr. Buck's skill as an author in his special branch is in no wise diminished by the immensity of his editorial labors, for he has given us a book which we count worthy as a standard, and can with profit be added to the working volumes of one's library.

ELEMENTS OF HISTOLOGY. By E. Klein, M.D., F.R.S. Illustrated with 194 Engravings. Lea Brothers & Co , Philadelphia, 1889.

This is one of the charming Manuals for Students of Medicine, several of which have been issued from time to time, and all of which have proven to be of such excellent material.

This little volume is a perfect gem of excellent wood-engravings, and has an illustration for more than every two pages, many of which are reduced from Klein's Atlas, some of them being photomicrographs of a superb quality.

The teaching quality of engraving is of so much value and attractiveness, we wonder that more pains is not bestowed upon the illustration of elementary text-books. So great is the attraction in this little work it will not fail to be appreciated by teachers and students.

A TREATISE ON SURGERY; ITS PRINCIPLES AND PRACTICE. By T. Holmes, M.A., Cantab. With 428 Illustrations. Fifth Edition. Edited by T. Pickering Pick. Philadelphia: Lea Brothers & Co., 1889.

This is the smaller treatise on surgery by the editor of the *System of Surgery.* It is a volume of over a thousand pages, however, and is designed as an introduction to the *System.* The author has omitted former chapters on diseases of the eye, as it "could only be taught by one actively engaged in ophthalmic practice, and then very inadequately in the limited space which could be devoted to it in this work."

We are not familiar with the former edition of this text-book, but in this one we find the rules of antiseptic surgery clearly set forth, according to the most advanced practice. The author says in reference to the application of antiseptic dressings: "I am strongly of the opinion that the less moisture there is about a wound, the better the result." He is also an advocate for the removal of dressings within twenty-four hours of the operation in order to get rid of the dressing, which has become more or less soaked by the oozing of blood and serum, and no antiseptic dressing should be allowed to remain longer than a week.

The thoroughness with which all parts of this excellent text-book is written, makes it a rival of the best. It is only under such heads as diseases of the skin that we have any desire that diagnostic descriptions were more extensive, but for the same reason that diseases of the eye are not attempted within the compass of the volume, dermatology might likewise be omitted.

We failed to discover any mention of Bigelow's apparatus for crushing and evacuating vesical calculi, and his name does not even appear in the index, while Sir H. Thompson and Mr. Clover's apparatus are conspicuous. Smith's anterior splint is not even mentioned by name, and the extension of the femur is figured in Dr. Buck's apparatus. Evidently the author did not design to give historical order to his surgical descriptions, or go beyond his own country, where the richest material lies in profusion for illustrating the principles he is seeking to inculcate.

This American reprint is beautifully and substantially brought out by the publishers. The student whose store of surgical reference lies only in this volume, has all he can reasonably desire, and to all we heartily commend it.

ELECTRICITY AND THE METHODS OF ITS EMPLOYMENT IN REMOVING SUPERFLUOUS HAIR AND OTHER FACIAL BLEMISHES. By Plym. S. Hayes, A.M., M.D. W. T. Keener: Chicago, 1889.

This is a practical essay, in excellent book form. The author gives first, a chapter on the Histology of the Skin and Hair; then describes the necessrry apparatus, and finally the operations for nævi, superfluous hair, etc. It is not tedious in detail, and may be consulted by any one interested in the subject in a very short time.

GINSENG LOSING FAVOR IN JAPAN.--Reviewing Prof. Rein's "Industries of Japan," this item occurs in *The Nation:* "The United States alone are put down as having sent $700,000 worth of ginseng to China in 1877, but with the Japanese, because of European ideas of medicine, ginseng is passing out of favor. Western North Carolina has furnished, from a date far back into the century, the bulk of the ginseng exported, until the plant is all but exterminated in some mountain sections.

A WORD FROM THE TREASURER OF EHE MEDICAL SOCIETY OF NORTH CAROLINA.—Dr. Poole has sent out to all delinquents the following Circular, but we reprint it for the benefit of all who are carelessly allowing their membership to lapse:

DEAR DR.:—Your dues to the State Medical Society are ——— dollars. You will remember that Article VIII, Section 3 says: "Should a permanent member fail to pay the assessment of two successive years, after having been notified by the Treasurer of his delinquencies, his name shall be stricken from the list of members." Please remit the amount.

CURRENT LITERATURE.

SHOULDER-PRESENTATIONS AND THEIR TREATMENT; EMBRYOTOMY AND TARNIER'S RHACHIDIAN EMBRYOTOME.

Shoulder-presentations are often fatal for the fœtus, sometimes dangerous for the mother, and always troublesome to the accoucheur. Notwithstanding increased skill in the diagnosis of fœtal presentations during gestation, and in the conversion of harmful into normal positions during the same period, the time may never come when suitable examinations before parturition will be generally considered an all-important matter by the laity. Hence the probability that malpresentations will occur indefinitely. If one is called to a case of labor, not too far advanced, in which the shoulder presents, the uterine contractions not being too strong nor too frequent, and the membranes being still intact, external version should be practiced, and either the head or the breech be brought to the superior strait. If this plan cannot be carried out, combined external and internal version may be attempted. If, however, the membranes have been ruptured and the cord has prolapsed, and ergot has not been given, podalic version may be practiced and the mother be saved, though the child is usually lost. The operation is contra-indicated when the uterus is rigidly contracted, or when the shoulder is too firmly engaged. There would be danger of rupture of the uterus, without advantage to the fœtus, which is usually dead at such a time, the latter fact being obtainable, if it exists, by auscultation or by feeling for pulsation in the cord. To hope for spontaneous version and evolution is not giving sufficient protection to the mother, and among the destructive operations which suggest themselves, that of rhachidian embryotomy is believed to be the most simple and most safe, and the rhachidian embryotome of Tarnier is regarded as the most effective instrument for performing it, as it acts without undue traction, without the necessity of changing the situation of the fœtus, and is applicable in all cases. It consists of three parts: a crotchet, a knife and a protector. The crotchet is a rounded rod of steel which is sharply curved at its proper end, the curved portion terminating in a button about as large as a pea. The rod is pierced by a cylindrical canal, the greater diameter of which is near the handle. An attachment above the handle enables one to free the knife at will. The knife is triangular and cuts in an oblique direction, gliding tangentially upon the fœtus. When the instrument is closed, the cutting edge of the knife is lodged exactly in the curved portion of the crotchet. The protector is a quadrangular sheath, the form and dimensions of which are almost exactly those of the knife, and it becomes separated from the latter only to the extent to which the latter enters the fœtal tissues. The instrument should be made aseptic before being used, the different portions being subjected to the fire and to strong antiseptic solutions. The steps in the operation will vary according as one practices cervical or thoraco-abdominal embryotomy.

Cervical embryotomy includes the introduction of the hand, introduction and fixation of the knife, section of the neck, removal of the instrument and extraction of the fœtus. The left hand of the operator is introduced between the fœtus and the pubis if the left hand of the fœtus is inferior in position, and the right hand if the right fœtal hand is inferior. The palm of the introduced hand should look toward the back of the mother, and the figures of the operator should rest against the furrow in the child's neck. The crotchet is passed over the child's neck by the side of the operator's fingers, and the knife and protector adjusted, the vulva and vagina being sufficiently opened to admit of free play of the instrument. The arrangement is such that no harm can come to any tissues not involved in the grip of the crotchet, and, as the knife works through the fœtal tissues, there is no fear of injuring anything else. The neck having been divided, the crotchet and knife are removed together. Traction upon the projecting arm of the fœtus will usually suffice to remove the trunk, and the head may be extracted by means of a finger in the mouth, or possibly the forceps or basiotripsy will be required. In exceptional cases it is necessary to pass the crotchet from the back to the front of the fœtus, which entails difficulty in getting the instrument sufficiently vertical to obtain the required grip upon the neck. If the position of the fœtus is such that the neck is not readily accessible, traction upon the presenting arm may remedy the difficulty. If this does not suffice, the arm must be amputated. If the neck still remains out of reach, the remaining arm must be brought into position, and the neck will then be accessible. Should it be impossible to lower the arm, the trunk must be divided. This is not difficult, but two or three sections may be required. Thoraco-abdominal embryotomy with Tarnier' instrument is always possible, always easy, and never dangerous. The experiments of Potocki with this instrument show that it is applicable in the same conditions of contraction as the basiotribe, and that the limits imposed to the Cæsarean operation for longitudinal presentations should be equally imposed for trunk presentations. Clinical facts thus far have shown the efficiency of the rhacidian embryotome. In the course of the three years it is known that it has been used in eighteen cases, five of which were fatal; of the latter three experienced rupture of the uterus prior to the operation, and the other two were already septicæmic before embryotomy was performed. No maternal death has been reported which could be fairly attributed to the use of this instrument.—Le Page, *Le concours médical*—*New York Medical Journal.*

THE FORCEPS AND THE PERINEUM.

The correspondence, extending over some months in the *Journal*, on laceration of the perineum and the use of the forceps shows that the subject is one of widespread interest. The questions that immediately present themselves are: (1) What are the conditions that dispose to and cause laceration of the perineum from labor apart from operative interference? (2) Are lacerations more, or less, frequent under operative treatment, especially the use of the forceps?

The first impulse is to seek a solution in statistics; but ever so little reflection will prove that the key cannot be found in any figures we are likely to command, or in any mathematical method that can be applied. It is all but impossible to marshal complicated facts in such homogeneous groups as will admit of scientific analysis and comparison. As one instance of the fallacy of such a method in the present discussion, we have only to reflect that in labors effected by natural forces, the presumption is that the expelling and resisting forces were harmoniously balanced, and that in labors effected by aid of the forceps these forces were not well balanced. Therefore it may be inferred that it is not simply the forceps that make the difference, nor must we forget that skill in the operators is a variable quantity. The chief predisposing causes of rupture may be traced to fault in the driving power, to faulty condition of the pelvis, to malposition or excessive size of the child, to faulty conditions of the perineum. The driving power may be turbulent, in excess. One way of producing this is by giving ergot. This, of of course, should be avoided. Violent expulsive force may be provoked by undue excitation of reflex action by injudicious examination. Tyler Smith showed that even rupture of the uterus has been caused in this way. The best way of moderating excessive action is perhaps by inhaling chloroform. There are two conditions of the pelvis which more especially dispose to laceration. One is a narrow public arch, which throws the child's head backwards upon the perineum; the other is a too sharply-curved sacrum, with loss of mobility of the coccyx. In such cases the forceps or even craniotomy may be called for; and even if the forceps be used with the utmost skill, the perineum may give way.

In the case of excessive size of the child the perineum is obviously in danger, whether the forceps be used or not. If there is a reasonable prospect of delivering a live child, and the labor is arrested, there is a clear indication for resort to the forceps. Granted a normal presentation, by judiciously seconding the natural movements of progression the forceps may save the perineum. Two rules have to be observed. The first is to imitate or resist the alternate lateral movements of the head by gentle oscillation or pendulum action of the forceps, and by traction in the axis of the pelvis, only carrying the handles forward over the woman's belly when the occiput is so far engaged in the outlet as to permit of full extension of the head and rotation in Carus's curve. In this way strain upon the perineum is minimised; and this manœuvre is greatly assisted by "supporting the perineum." Applying the open hand in such a manner as to make it extend the coccygeal plane and push forward the perineum, the head is guided under the pubic arch. Thus three forces—gentle lateral leverage of the head, traction and gradual longitudinal leverage, that is force *a fronte*, and supporting and pushing the head from below—all act concurrently in moulding and directing the head.

In this way, undoubtedly, the perineum may be saved. A more serious case than even a large head is the occipito-posterior position. In this position, the occiput, instead of becoming gradually moulded in the sugar-loaf form under the pubic arch, remains broadened and flattened back upon the shoulders. The strain upon the perineum is enormous, and the pressure bears in excess upon the posterior portion, behind the fourcheste. In such cases, as some of our correspondents have shown, the laceration begins at the anus, or with a perforation through the perineum. Here the forceps is the true scientific help. By drawing the chin under the pubic arch, the face is made to revolve in Carus's curve, and the occupit made to follow; the base of the vicious wedge formed by its being jammed back against the shoulders is decomposed. Rupture, almost unavoidable without the forceps, may possibly be averted by its help. But much depends upon the choice of good forceps. The single-curved forceps is not to be trusted. Our text being simply how to save the perineum, we have strictly to consider only cases in which the head has entered the pelvic cavity. For such cases Simpson's forceps will commonly answer. But as it is not desirable to carry two instruments where one will do all the work, and as Simpson's is too short to seize the head above the brim, or even high in the pelvis, it is best to trust to Barnes's forceps, which seems to be now the one in most common use. The blades fit well on the head, the shanks between fenestræ and handles are long enough to admit of locking outside the vulva; it entails the minimum of stretching of the perineum, and the long lever, giving full power, admits of nice graduation and accurate direction of the necessary force. The length of the instrument further facilitates the use of the hands alternately or together, thus increasing the command of the operator, not alone in nice regulation of tractile force, but by making a fulcrum on the shanks with one hand, whilst leverage and traction forces are applied to the handles, the mother's parts are saved from undue pressure, and the advantage of axis-traction forceps, an instrument which has not obtained in this country the vogue it eminently deserves.

Lastly, there is the condition of the vulva itself. It may be unduly resisting, or the head may be driven through too violently before the perineum has had time to soften and dilate. Stormy precipitate labor is very apt to involve laceration. Another condition is a vulva too small and rigid. In such a case, if it be felt that laceration is impending, it is good practice to widen the outlet to relieve the spasmodic constriction by moderate lateral incisions, thus substituting the precisely limited aid of the surgeon for the unrestrained violence of Nature.

Lacerations of moderate extent are much more frequent than is commonly believed. Unless specially looked for they may easily escape notice. When recognized, the practical question arises: What is to be done? Slight rents are best treated by placing in the fissure a bit of lint soaked in solution of chloride of zinc. This guards against septic absorption, and cicatrization is promoted. If the parts have been much contused, crushed, during labor primary union may be defeated, and perineorrhaphy must be deferred until after the puerperal period. This operation is now so successful that the accident of laceration has lost much of the terror it too justly inspired when, before the days of Charles Brooke, this injury was regarded as an *opprobrium chirurgicorum*. Is it necessary to add a word of caution as to the tendency to rush too hastily to the forceps? Correspondents differ upon this point; some, perhaps, resorting to it too readily, hardly giving Dame Nature a fair chance, others trusting her too much. In first labors in young women patience is often better than the forceps. When to interpose must greatly depend upon the judgment and experience of the surgeon.—*British Medical Journal.*

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SOME LIGHT ON CANCER.

Than cancer, the nosological category has no disease that has been more thoroughly studied, clinically, pathologically and therapeutically, nor any which has yielded under such study more discouraging results. To this date the etiology of cancer and its nature are unsolved mysteries; it is still doubtful if heredity predisposition has aught to do with determining its development in any case, while the theory of its contagious character has, till now, received no support from physiological experimentation. These considerations, together with the undoubted fact that the disease is rapidly on the increase in Europe and America, the frightful operations which are often undertaken for the temporary relief of its victim, and the prognosis of despair which at last must be made in the majority of cases, clearly entitle it to the chief place among the furies whose office it is to scourge mankind.

It is therefore with uncommon interest that we learn that Hanau, of Zurich (*La Samaine Medicale*), has succeeded in transferring the carcinoma of a rat afflicted with papillar cancroid to two animals of the same species. The inoculation of an animal with cancer has hitherto been considered an impossibility. Success in this case will give stimulus to renewed study, and gives hope that the etiology of the disease may yet be mastered.

A vital point in the treatment of cancer, though not new, was given due emphasis by Prof. Heidenhain at the Eighth Congress of the German Society of Surgery, held in Berlin, April 24th to 27th. In some remarks on the causes of the local recurrence of cancer after extirpation of the breast, he said that "in all cases where there was afterward recurrence he had been able to convince himself, by microscopical examination, that particles of cancer had been left in the wound during the operation. Sections of apparently sound tissue in the vicinity of the morbid tumor revealed *epithelial trails* infiltrating the parts. These epithelial trails follow the lymphatic vessels and sometimes extend to the aponeurosis of the pectoral muscle." Heidenhain had studied eighteen cases in which the breast had been extirpated for primary cancer. In six of these he found the tissue surrounding the tumor free from epithelial infiltration, and in these the disease has not returned.

Since the lymphatic vessels which constitute the channels of infiltration run perpendicularly down into the pectoral fascia, this structure, with sometimes a part of the muscle itself, should always be removed with cancer of the breast. Küster has long followed this practice. Cancers of the breast, when adherent to the pectoral aponeurosis, are always of bad prognosis. Of Von Volkmann's sixty-five cases in which this adhesion was noted, but two of the patients failed to suffer recurrence of the disease.

While the crumbs of comfort found by the pathologist in these observations may be never more than crumbs, the practical surgeon will find excuse for enthusiasm in the rosy prognoses of cancer under treatment which the discussion at the Congress brings to view.

As the *Boston Medical and Surgical Journal* puts it, the following delightful showing was made:

"Von Bergmann presented a case of carcinoma of the pharynx operated upon in 1884; three months afterward disease returned, when complete extirpation of the glands was effected; since then the patient has remained free from cancer. A case of cancer of the face, extirpated four years ago, no return; two cases of cancer of the lips, operated upon two years ago, no return. Thiersch, of Leipzig, sometime ago operated on cancer of the stomach; there had been no return. Kœrte, of Berlin, two years ago extirpated a cancer of the larynx; the patient has had no recurrence. Von Bergmann said that four years ago he removed half the larynx for cancer. The patient had remained well to the present time. Schmidt, of Frankfurt, three years ago removed the entire larynx for cancer; no recurrence; Schmidt, of Stettin, had also removed, two and a half years ago, the entire larynx for cancer; the patient recovered and kept well; he breathes through a canula. Von Esmarch stated that twenty years ago he operated on a case of cancer of the tongue; the patient remained free of his cancer; recently he died of apoplexy. Schebe, of Hamburg, had operated on three cases of lingual cancer; after several years there had been no recurrence. Von Bergmann presented a case of cancer of the tongue operated on two years ago, and another operated on four years ago; both had remained well and exempt from recurrence. Küster and Krause had had similar cases. Of cancer of the rectum, three cases were communicated by Krause; extirpation was performed six, eight and nine years ago; all are now free from the disease. Bergmann presented a patient on whom the 'high amputation' of the rectum for cancer had been performed four years ago; no recurrence. Schinzinger, of Friburg-in Bresgau, reported that he had operated on eighty-six cases of cancer of the breast; in twenty-six only there had been a return in the course of a couple of years."—*American Practitioner and News.*

THE Catalogue of the University of North Carolina for the year past, shows that the Institution is well equipped for work. It enters upon a second century of life with every promise of enlarged usefulness and prosperity. The next session begins September 5, 1889. For catalogues address Hon. Kempt P. Battle, President, Chapel Hill, N. C.

CAPILLARY HOLES THROUGH THE SKULL FOR EXPLORING THE BRAIN.

The ingenuity of Americans seems to be inexhaustible, and it is only necessary to suggest a want, when some one is sure to find a means of filling it. Dr. Edward Souchon read before the Louisiana State Medical Society an article "On the Drilling of Capillary Holes Through the Skull for the purpose of Exploring with the Hypodermic Needle," which has since been published in the *New Orleans Medical and Surgical Journal*, and which we abstract below :

"Spitzka has demonstrated that the penetration of the brain tissue by the hypodermic needle is harmless if antisepsis is strictly observed. The method of exploration has heretofore been to trephine at the suspected spot and then examine the subdural spaces and the brain. This is, however, quite a serious operation, and is therefore delayed often until it is too late to be of service. It was this difficulty that made the author attempt the discovery of a simple and less dangerous method of locating and diagnosing in the early stages, abscess, cysts and other diseased conditions of the brain, and so he began his experiments on dogs.

The animals were chloroformed, the hair shaved and the spot for exploration made antiseptic. The scalp was lanced with a sharp bistury, the bit of a watch-maker's drill introduced and the bone perforated. The instrument was then withdrawn and a hypodermic needle introduced which was twice the size of the one commonly used, in order to allow the passage of thick pus. Two dogs were thus treated, four holes being drilled in the head of each and the needle driven about an inch and a half into the brain substance each time. Recovery rapidly took place, the animals showing no untoward symptoms whatever. At the end of two weeks the operation was repeated on the same dogs with the same result as in the former experiment, and no remote results had manifested themselves after several weeks observation.

Another dog was purposely killed before recovery from chloroform, and an examination revealed extravasation of blood about the size of a nickle under the scalp, and another the size of a pea under the pia mater.

The author writes that a tumor of greater consistency than the brain would immediately be recognized by the hand of the operator, and by working the piston at different depths fluid could easily be detected. Thus it may be possible in the near future to aspirate for cerebral hemorrhage as well as for pleuritic effusion.—*Saint Joseph Medical Herald.*

HINT FOR THE MICROSCOPICAL EXAMINATION OF URINE.

The suggestions that are being continually thrown out, relating to the examination of urine, prove that the wide-awake members of the profession are aware of the information to be derived from this source, and are practically endeavoring to facilitate our present methods. The following hint, taken from the *London Lancet,* will be appreciated by workers in this field.

When attempting to examine urine under the microscope for casts, epithelial cells and other organic bodies, a good deal of annoyance and difficulty is sometimes caused, both by urates and also when the specimen is not quite fresh by fermentation and putrefactive products. In order to obviate this difficulty, and with the further view of preserving the specimen, Dr. M. Wendringer advises that the urine should be mixed with a nearly saturated solution of borax and boracic acid.

This dissolves the urates and keeps the urine from fermenting, and at the same time exercises no destructive effect upon the casts and epithelial elements which it is desired to examine. The solution is prepared by mixing twelve parts of powdered borax in one hundred parts of hot water and then adding a similar quantity of boracic acid, stirring the mixture well. It is filtered while hot.

On long standing a small deposit crystallizes out, but clings to the side of the vessel, so that it does not interfere with the transparency of the liquid. The urine to be examined is put into a conical glass and from a fifth to a third of the bulk of the boracic solution added to it and agitated with it. The urine will be found to become clear in a short time, that is if there is no cloudiness due to bacteria, and it will remain unchanged for several days. If it is only wanted to clear the urine and make it keep for a day or two, the addition of a smaller quantity of the boracic solution is sufficient. If a third of its bulk is added, no fermentation or putrefactive processes take place, even if the glass is left uncovered in warm places. Albumen, too, if it exist, is not coagulated. The organic elements, as epithelial cells, casts, blood-corpuscles, etc, collect so quickly without undergoing any morphological change at the bottom of the glass that the first drop taken up by the pipette usually proves a satisfactory specimen.—*Saint Joseph Medical Herald.*

A NEW TREATMENT FOR CHRONIC RINGWORM OF THE SCALP.

Only those who have attempted to cure a group of cases of chronic ringworm of the scalp can appreciate the disheartening obstinacy of the affection. Ringworm of the body is easily cured by a few applications of tincture of iodine, and so usually is ringworm of the scalp, when treatment is begun soon after infection has occurred. But when the fungus has once penetrated into the interior of the hairs and hair follicles it is sometimes almost impossible to eradicate it, and the longer the affection has lasted in any case, the more rebellious to treatment does it become. The fungus, so far as we know, does not cease to be susceptible to parasiticides, but the reason why the latter are so slow in acting is that they cannot be brought into contact with the fungus, situated, as it is, deeply beneath the surface of the scalp. One of the most useful suggestions that has hitherto been made, with the view of obviating this difficulty, is that of Mr. A. J. Harrison, of Bristol, England. The results obtained in Philadelphia by the applicaiion of Mr. Harrison's method were communicated to the *Reporter*, June 23, 1887, in an article by Dr. Herman B. Allyn. Without rehearsing Mr. Harrison's method, suffice it to say that he employed a solution of caustic potash to soften the hairs and scalp tissues, and when this end was reached the parasiticide was applied. Two solutions were thus used.

In a communication published in the *British Medical Journal*, March 2, 1889, Mr. Harrison gives what he believes, after considerable experiment and an experience with one hundred cases in two years, is an improvement upon that which has itself produced most excellent results. The author combines the remedies in an ointment composed of caustic potash, 9 grains; carbolic acid, 24 grains; lanolin and cocoanut oil, of each ½ an ounce. This ointment may be scented with some suitable oil, and a small portion of it should be rubbed into the affected parts night and morning. The caustic potash contained in it acts upon and softens the hair-matter, and in this way allows the carbolic acid to have free access to the fungus and its hosts of spores. The author thinks there is a decided advantage in leaving, when it can be done, as much as a quarter of an inch of hair; the ointment seems to have better play, and is kept on the part affected.

Those who have tried Mr. Harrison's former plan of treatment will receive his latest suggestion on the subject with great confidence, and will also be glad to learn that shaving of the head, and still more, epilation, which is painful to the little patient and extremely trying to the perseverance of the physician, are both unnecessary, and even unadvisable. Carbolic acid is, of course, the parasiticide, and as it is not really an acid, there is, of course, no impropriety in combining it with an alkali.

Ringworm of the scalp is such a dreadful scourge that it may be worth while to mention in this connection the means employed by Mr. Harrison to prevent infection. He applies to the heads of children liable to be infected an ointment composed of boracic acid and oil of eucalyptus, of each two ounces; oil of cloves, one-half a fluid drachm, and oil of cocoa nut, sufficient to make six ounces. This makes an elegant prophylactic pomade.—*Medical and Surgical Reporter.*

TREATMENT OF THE BRICK-DUST DEPOSIT.

Dr. A. J. Johnson (*Canadian Practitioner*) writes that an error in diet, too much beer, port or champagne, may cause a temporary pinkish deposit in the urine, composed of uric acid usually in the form of urate of soda, potash or lime. In those who habitually pass this kind of urine, after a time augmented by crystals of uric acid, there is a strong tendency, inherited or acquired, to the production and accumulation of uric acid, manifested eventually by gout or calculus, two diseases intimately associated. When the symptoms of gout begin to lessen, those of gravel appear, and both diseases are frequently hereditary. The chalk stones seen in the knuckles of old people are composed of urate of sodium, the same material as the brick-dust deposit.

Sulphate of soda seems to be the best remedy for this condition, and should be given in the form of natural mineral-water, for it is a fact that this salt in any artificial form is of little therapeutic value. Alcohol, sugar and fats are the chief aliments to be avoided, though a Rhine wine or sound Bordeaux may be permitted if necessity demands. On the alcoholic point Sir Henry Thompson says: "It is not only not essential to the health of most persons, but is absolutely prejudicial to most, but especially to the torpid liver is it deleterious." By carrying out this plan the over-loaded liver will be relieved of a portion of its labor, the kidney will have less to do, and the uric acid will disappear from the urine.--*Saint Joseph Medical Herald.*

THE PRINCIPLES OF THE TREATMENT OF CHRONIC ECZEMA.

Jarisch gives us an attractive title, for who would not rather have some principles on which to act in the management of this common and troublesome affection rather than the simple addition of new formulæ to old?

He truly says that there is no such thing as a specific local treatment of eczema. The treatment is and must be entirely symptomatic.

It must be remembered that the irritability of the skin is not only different in different cases, but also varies in the same case at one time or another. This gives us our principle in treatment, namely, the greater the irritability the more perfectly "indifferent" the local application. In addition, cases should be under frequent observation.

The means ordinarily employed in the local treatment of eczema are divided by Lassar into three different classes: (1) Drying and protective "indifferent" applications. (2) Softening and macerating applications. (3) Applications having the effect of diminishing hyperæmia and aiding cornification.

In the first category we include dusting powders, and particularly Lassar's paste, which is composed as follows: ℞. Pulv. acidi salicylici, gr. x–xxx; pulv. amyli, pulv. zinci oxidi, āā gr. c; vaselini, gr. cc.—M. This paste may be spread with the hand over the affected part, which is then to be powdered. This paste is peculiarly useful in acute eczema, but may also be employed in the chronic stages of the disease. In cases of papular eczema, where macerating produce an increase in severity and also a spread of the eruption, this application is of use. The simple dry powders of starch, oxide of zinc, etc., also claim a place here.

To come to the second category, that of softening and macerating materials, we have water, most ointments, salve-soaps, soaps, plasters, and plaster mulls. The indication for the employment of these remedies is found in the accumulation of the products of disease on the skin and in its excessive dryness.

Among the members of this class which may cause irritation we must include soaps and impermeable dressings, which therefore can only be used in cases where there need be no fear lest we should arouse fresh eruption. Among the milder remedies of this class are ointments, which rarely excite irritation. Why one of these should be used rather than another; why in one case we use diachylon, in another borax, zinc, salicylated ointments, etc., we cannot say. Jarisch thinks the main point in every instance is the same, namely, the maceration of the skin. He thinks that ointments with a high melting-point like diachylon macerate better than those of low melting-point like vaseline, and are therefore preferable.

When ointments do not seem to agree, Jarisch recommends having recourse to Unna's plaster mulls (easier to talk about than to get in this country), or Pick's salicylic soap-plaster, of which Jarisch does not give us the formula.

To the third class of applications belongs tar—a valuable remedy, but one not to be used for the first time without precaution. Its chief use is found in squamous conditions.

A fourth category may be added to the first three—that of antipruritics. Jarisch has not much to say about these, but recommends alcohol and carbolic acid solutions.—*Cbl. f. Gesammt. Therap.*, January, 1888.

POISONING BY HYOSCINE HYDROBROMATE.

In the February (1889) number of the *Therapeutic Gazette* are reported two cases of poisoning by hyoscine, which show this alkaloid to be a powerful and uncertain drug.

In one case 1-75 of a grain was given hypodermically to a man by mistake, and again alarming symptoms resulted. Both patients recovered the same day without bad results.

In the case here reported 1-100 of a grain of hydrobromate of hyoscine (tabrets of Sharp & Dohme, of Baltimore) was given hypodermically, at 11 a. m., to a delicate woman, about 28 years of age. She had been accustomed to taking morphine and atropine in the same way for the relief of severe pain in the cervical spine, and on this occasion hyoscine was substituted, without her knowledge, in the hope that it might take the place of the morphine, of which there was danger of forming the habit.

In about three minutes after the drug was given dryness of throat and mouth was felt, face was flushed, and a very nervous, quivering sensation felt all over the body. The rush of blood to the head continued until the face was nearly purple. Sight was dim, pupils dilated very much, and patient seemed aware that she had taken some new remedy, asking, "What was given me?"

In a short time delirium occurred; she cried bitterly, seemed very nervous, and insisted upon sitting up in bed, though her efforts to do so proved her too weak.

In half an hour's time limbs seemed torpid; could only raise her hand with great difficulty; eyelids were so stiff that she could not close them. Nausea felt in twenty minutes after taking the drug; continued several hours.

The patient complained of a sinking sensation, and those about her thought several times she was failing fast. Delirium nearly all the time; patient greatly depressed and talking in a most despondent way, this being very unnatural for one of her cheerful disposition.

In the afternoon she seemed to be in a stupor, though roused at times and spoke. In five or six hours the effects of the drug seemed to wear off, and she was herself again, though very much weaker.—D W. Prentiss, M.D., of Washington City, D. C., in *Therapeutic Gazette.*

A DIAGNOSTIC SIGN OF TYPHOID FEVER.

The following particulars of a very remarkable aid to the diagnosis of enteric fever, contributed by Dr. Howard Taylor to the *Lancet* for May 4, 1889, can hardly fail to be of value to the profession; the more so that many cases of this protean malady are extremely atypical, so as to be very difficult, or even impossible, of diagnosis; while obscure cases of other diseases are continually arising which so closely resemble typhoid fever that one cannot express any certain opinion as to their nature. By the aid of this additional sign it is claimed that one is able either to arrive at a more definite diagnosis, or else to exclude typhoid fever in not a few of such cases; when, but for this additional evidence, the nature of the patient's illness must have remained either altogether, or at least for sometime, a matter of doubt.

In the year 1882 Dr. Ehrlich announced the fact that the urine of patients suffering from typhoid fever gives a reaction—with one of the aniline derivatives—different from that of normal urine and from the reaction of the urine of patients suffering from other diseases.

His test solutions are as follows: *A*, a saturated solution of sulphanilic acid in dilute (1 in 20) hydrochloric acid; *B*, a .05 per cent. solution of sodic nitrite in distilled water. (Both of these solutions must be fresh, especially the latter, which cannot be depended on for more than a week at the longest. When they are mixed, of course, a solution of sulphanilic acid containing free nitrous acid is produced, which is the actual test solution; but, on account of the extreme instability of the latter, the two solutions must be mixed fresh at each testing.) In using the test, about 25 parts of *A* are added to 1 of *B*. Mix with this an equal bulk of the urine to be examined, and render alkaline with strong ammonia.

It is thus seen that the test referred to by Dr. Taylor is not a new one, and it could scarcely seem that a fact which has been known so long and used so little could be of great value. Dr. Taylor, however, states that, at the request of Dr. Sansom, he applied it to a large number of cases with the following results:

With normal urine, the only change which ordinarily occurs is a mere deepening of its color to a sherry or vinegar brown. In conditions of pyrexia other than typhoid fever the color also deepens, but still remains merely brown, although usually it becomes of a darker tint than the average color given by normal urines. But when the test is applied to the urine of a patient with enteric fever, the color rapidly turns red, the exact tint it acquires varying from the yellowish-red of bichromate of potassium solution, though ruby-red, to a rich port-wine color. On shaking the test-tube a froth is produced, which has usually a delicate pink color that is very characteristic.

Such is the reaction; now as to its limitations. In the first place, it is not *always* given until the latter part of the first week; but as the case frequently does not come under observation till then, this does not greatly limit its usefulness. And again, after the morning temperature has once reached normal during the intermittent stage (usually in the fourth week) it may—though it frequently does not—cease to be given.

Dr. Taylor adds that, as far as his experience has gone, the reaction is present during a great part of the febrile period, *in every case.* It is this which constitutes the great value of the test.

If it had been found—as one could have wished—that typhoid fever was unique in this respect, the test would have been by far the most reliable sign we possess, as being the only invariable one. But, unfortunately, *in exceptional cases,* the reaction is given in other diseases. Herein lies its weakness. However, while in most diseases it is a more or less rare exception, it seems to be an invariable (or almost invariable) rule in enterica. Occasionally, even in the urines of healthy subjects, a slightly reddish color is developed; but this is *very* rare, and the redness is hardly ever well marked; indeed, the deep rich crimson which is given in so many cases of enteric fever never being produced.

Apart from conditions of pyrexia, Dr. Taylor states that he has notes of cases of Bright's diseases, both acute and chronic, which gave this "typhoid reaction;" indeed, in albuminous urines he has found it more frequently than might be expected; but with this exception it is extremely rarely given by the urines of patients whose temperatures are normal. Thus, out of a large number of cases of valvular disease of the heart, it only occurred in one in which hysteria was well marked. In chorea a slight reaction was given in one out of six cases. In two cases of diabetes mellitus and one of diabetes insipidus the reaction has not been given on any occasion. In febrile diseases it seems to be especially common in measles; while in acute tuberculosis, which of all diseases, perhaps, most often simulates typhoid fever, it has been absent in each of several cases that he has examined. In acute and advanced chronic phthisis reaction has been obtained in a few of a good many cases, but in the ordinary cases of this disease it has not been detected. In cases of lobar and of lobular pneumonia none of the urines have turned red. In only two of a large number of cases of acute rheumatism has the reaction been present.

From the above facts it would seem that the following conclusions can be drawn from Ehrlich's test. The absence of the reaction is practically proof positive that the case in question is not one of enterica (provided that the disease has lasted six days or more, and that the temperature has not yet fallen to normal). Its presence suggests—but does not prove—that the case is one of typhoid; the probability being greater the deeper the tint produced. And as the diseases in which it occurs least rarely are not those which most closely resemble typhoid fever, but the reverse, the significance of these exceptions is very greatly diminished.—*Therapeutic Gazette.*

THE DANGERS OF THE SUSPENSION TREATMENT OF LOCOMOTOR ATAXIA.

Dr. Gorecki reports the case of a man, aged forty, who was suffering from a very acute form of the disease, and had become almost paraplegic; he read about the suspension treatment in the *Petit Journal*, obtained the apparatus, and had himself suspended by his man-servant for two or three minutes every day. For the first seven days all went well, and the patient noticed considerable improvement in his condition; but, after the eighth suspension, he was extremely ill, and lost speech and hearing. In spite of vigorous treatment, he grew rapidly worse, swallowing became impossible, sight was lost, the arms, and finally the thoracic muscles, became paralyzed, and he died in twenty-four hours of suffocation. The accidental death in a suspension apparatus of Dr. Vincent, of Sharon Springs, hat already been extensively noticed.—*Med. Record.*

NOTES.

Yellow Fever was first seen in North Carolina in 1712, Governor Hyde dying with the disease September 8th.

Dr. J. A. Hanks, a prominent and esteemed physician of Chatham county, died at his residence, in Pittsboro, April 26, aged 75 years.

Pate de Foie Gras.—According to M. Moule, domestic fowls—chickens, geese and ducks—are frequent sufferers from tuberculosis, the disease commonly involving the abdominal organs. "*Paté de foie gras*," he says, is ofteutimes almost a pure culture of tubercle bacilli.—*Medical Age.*

Sulphonal and Our American Laws.—Owing to competition among manufacturers abroad, the price of sulphonal in Germany is said to be only 45 cents an ounce. In this country our law protects a foreign patentee, and Americans have to pay $2.00 per ounce for the drug.—*Medical Record.*

Quassia in Drunkenness.—A half-onnce of ground quassia is steeped in an ounce of acetic acid, adding a pint of water before steeping. A teaspoonful in a little water should be taken every time the liquor thirst is felt. It satisfies the craving and produces a feeling of stimulation and strength.—*Medical Age.*

The college lecture should be abolished. Instead the student should be compelled to master a good text-book, and depend upon his living teacher for demonstration and illustration of truths which he has learned.—*American Lancet.*

[In other words, just what the University of Virginia Medical School has been doing for half a century.—Eds.]

Oleate of Quinine Again.—We meet in our practice cases in which physicians apply quinine rubbed up with lard, by infriction. This is inert. An improvement is in the solution of quinine alkaloid in oleic acid, this can be still furtaer improved by adding to a solution of oleate of quinine, a sufficient quantity of lanolin. If the disappearance of the mixture from the skin is an indication of its absorption, it is effectual.

Of all deaths at Bellevue Hospital, no less than 60 per cent. exhibited old tubercular changes in the lungs which had been recovered from.—*H. C. Loomis.*

Correction.—*Messrs. Editors North Carolina Medical Journal:* Dear Sirs:—Please correct error in May number of your Journal. The Committee on Written Examinations, appointed at the meeting in Fayetteville, 1888, consisted of Drs. Knox, Reagan and Murphy. Dr. Knox being absent at the opening of the meeting in Elizabeth City, Dr. F. Duffy was appointed in his place, and rendered valuable aid in preparing the Rules which now govern the Board.

Yours, very truly,
W. J. H. Bellamy, M.D., Sec'y.

Incontinence of Urine in Children.—Dr. Simon Baruch, in the *Archives of Pediatrics*, April, 1889, claims considerable success in the treatment of this frequent and annoying affection with belladonna or atropine. To children from six to ten years of age he gives 1-60 grain of atropine about 4 o'clock p. m., and repeats it at bed-time, unless at that time the pupils are well dilated. He deems it necessary, for success in the treatment, that the child be sufficiently under the influence of the medicine to have the pupils dilated during the hours of sleep.—*Journal American Medical Association.—The American Practitioner and News.*

Dr. James F. Foulkes.—Dr. James F. Foulkes died on the morning of May 22, 1889, at his residence, 571 Twelfth street, Oakland. The disease to which he finally succumbed, and against which he had battled for so many years, was diabetes mellitus. He was born near Guilford Court House, North Carolina, in January, 1829. His literary studies were chiefly pursued at Pinceton, and he graduated in medicine at Jefferson Medical College in 1852. During the civil war he rose to a high rank as surgeon in the Confederate Army, and in 1865 was made Surgeon-in-Chief of the Great Winder Hospital, Richmond, Va. He located in Oakland in 1875, where he has since been constantly practicing until some months ago, when he was compelled to relinquish work on account of the encroachments of his malady. Among those surviving him is a son, Dr. John T. Foulkes, a practicing physician of this city.—*Pacific Medical Journal.*

Linen Thread for Sutures and Ligatures.—Dr. Willy Meyer reports having found a substitute for other kinds of ligatures and sutures in linen thread, such as is sold at regular dry-goods shops. It is serviceable, safe, cheap and easily prepared. The only preparation necessary is to wind it on a glass rod and soak for twelve hours in a solution of corrosive sublimate (1 per cent.) and then preserve it, wound on a glass spool, in a one-to-one-thousand solution of the same. It was not necessary to boil it first in 5 per cent. solution of carbolic acid, and then preserve it in alcohol, as had once been done with silk. By soaking the thread in a 10 per cent. solution of iodoform in ether, shortly before using it, iodoform linen thread could be easily prepared. Linen heals well in the wound, but should be used only where primary union is to be expected. In comparison with catgut, its only disadvantage is that it is not so slippery, and therefore has to be pulled more. When moist it is stronger than when dry. Of course, catgut is the ideal article, but its aseptic condition, even after a thorough primary disinfection, is often untrustworthy, especially in the case of a thick thread which has been preserved for sometime.—*N. Y. Med. Jour.*

Tar Water.—Dr. William Murrell has recently delivered a lecture upon the therapeutic value of tar, and has gone very thoroughly into the history of its uses. He refers to a pamphlet, written in 1823, by Sir Alexander Crichton, entitled "Practical Observations on the Treatment and Cure of Several Varieties of Pulmonary Consumption, and on the Effects of Vapor of Boiling Tar in the Disease;" also to an article by Sales-Girons, in 1860, on the treatment of phthisis by inhalation of pulverized liquids and fumigations of tar. Dr. Murrell has been using tar in the treatment of chronic bronchitis, and speaks of it in the highest terms. He at first used 2-grain pills, but has latterly prescribed the syrupus picis liquidæ U. S. P., of which the dose is about a tablespoonful, given frequently. He says: "A mixture of two parts of syrup of tar and one part of syrup of prunus Virginiana is an ideal cough mixture. It has a sweet, agreeable taste, and patients, as a rule, like it. When the cough is very irritable, and there is very little secretion, the addition of three minims of liquor morphinæ acetatis will be found most useful. I have used with some success aromatic oil of tar, which is apparently a solution of tar in old Jamaica rum. The results have been good, and the preparation is popular with patients. When a more decided expectorant action is required, I add a small dose of hydrochlorate of apomorphin, about one-tenth of a grain."—*Med. Record.—Medical Age.*

CREOLIN.—Dr. Edward A. Otis (*Boston Medical and Surgical Journnl*, June 20) gives us a useful resumé of what is practical in regard to this new drug. Creolin is prepared from English pit coal by distillation, and in appearance is a brownish black oily fluid, easily soluble in alcohol, ether and chloroform. With water it forms a homogeneous white, slightly alkaline emulsion. It has a tarry odor and an aromatic burning taste. It is, as far as known, non-poisonous germicide and antiseptic, a perpect deodorant, to a certain extent hæmostatic. It is non-irritating, and has a happy effect on unhealthy and pus-secreting mucous membranes. A one per cent. solution of creolin is a powerful deodorant for stinking carcinoma; a two or three per cent. solution is hæmostatic; a two per cent. solution will destroy the odor of iodoform; for fresh wounds, burns, bed-sores, abscesses, carbuncles, sinuses, empyema and gangrene, it is useful. Dr. Otis' summary of the new drug is sufficient to bring it into notice, but it must go through with the usual probation before we can give it our confidence. It costs about as much as carbolic acid.

THE DIAGNOSIS OF UTERINE FIBROIDS.—The more one learns of the clinical history of cases of uterine fibroids the more does one perceive that the text-book symptoms require careful revision. It is generally taught that soft fibroids are rapid in growth, while the hard variety is slow, but that in both, menstrual disturbances, usually in the direction of menorrhagia, are invariably present. The fact, however, remains that cases are constantly met with in which these rules do not hold good, particularly in respect of the excessive loss of blood at the menstrual epochs. We have recently seen recorded several cases of fibroid successfully operated upon by abdominal section in which the necessity for operative interference was based upon the mechanical effects of the tumor, and the general distress occasioned by its presence, and in which no excess of the flow was complained of. It is evident that the relation between the existence of fibroids and excessive menstruation is not at present understood, and may ultimately be found to depend on anatomical reasons still to be discovered. This is an important point to bear in mind, as otherwise the practitioner is very apt to be put off the scent by the absence of menorrhagia, even when he has been led to suspect the presence of fibroids by either signs and symptoms. The rate of growth, too, is remarkably variable, and should not *per se* be allowed too much weight in arriving at a diagnosis.—*Medical Press and Circular.*—*Cincinnati Lancet and Clinic.*

MENTHOL IN PRURITUS.—Dr. Saalfeld gives the following formulæ for the use of menthol in pruritic affections:

1.	Menthol	22 to 37 grains.
	Spir. vini rectificati	1½ oz.

M. ft. lotio.

2.	Menthol	37 grains.
	Olei olivæ	2—3 dr.
	Lanolin	1½ oz.

M. ft. unguent.

3.	Menthol	48 grains.
	Balsam peruv	96 "
	Unguent zinci benzol	
	Lanolin pur āā ad	2 oz.

M. ft. unguent for use in scabies.

—*Deutsche med. Wochenschrift.*

NASAL BOUGIES.—Dr. H. C. Wood states in the *Therapeutic Gazette*, January 15, 1889, that having had a severe case of hay-fever in his own household, he was led to make experiments upon nasal bougies. He tried gelatin without success. When fresh, bougies made of it have not sufficient stiffness to be inserted into a partly occluded passage, but in a few days they become so hard as to be distinctly irritating. Cocoa-butter seems to be free from objection, though some skill is required to make bougies of it when it is used alone. The employment of wax is altogether objectionable. If the patient is lying down, the bougie should be pushed forcibly upward, so as to jam itself between the two sides of the upper nostrils, closed by the swelling of the erectile tissue; it will then be held firmly in place, and in a few minutes will melt. After the insertion of the bougie, the patient should continue to lie down, with a pledget of absorbent cotton wet with cocaine pushed up the nostril, so as to prevent the cocoa butter as it melts from running over the lip. The only medicine that Dr. Wood has found of service in hay-fever is cocaine, which, he says, seems to act better when added to a little atropine. Each bougie should be made to contain one grain of hydrochlorate of cocaine and one-twentieth grain of atropine.—*Medical and Surgical Reporter.*

A Prize for Cleanliness.—A winter resident at Green Cove Springs, Florida, has offered a premium of $1,000 for the city or town in that State which, on July 1, 1889, shall present the most cleanly condition in public and private premises.—*Med. Record.*

The Diagnosis of Hernia.—Dr. Multanovski suggests the addition of a new diagnostic sign to the classical method of diagnosing abdominal hernia. Having made observations on one hundred and fifty-two cases of hernia in Professor Bogdanovski's wards, he states that in all these, when the finger was passed up into the abdomen, a more or less tightly stretched strap-like band could be detected connecting the contents of the sac with those of the abdomen.—*American Practitioner and News.*

Creasote in Diabetes.—Two cases of diabetes have been treated with excellent results by Valentini by means of creasote administered internally. In one case four drops per diem were given at first, this quantity being afterward increased to ten drops. Under this treatment the sugar disappeared, and did not return when the patient began to eat starchy food. The other patient was given six drops per diem, and did equally well.—*London Lancet.*

Treatment of Oxyurus Vermicularis.—Gubb, *London Med. Record and Allgem. Med. Centralz*, recommends rectal injection of pure cod-liver oil, or an emulsion of it with eggs, as reliable and not irritating. Grimaud calls attention to the fact that Lallemand (Montpelier) obtained the most reliable results with natural sulphur waters. He (Grimaud) also had opportunity to convince himself that sulphur water is poisonous for intestinal worms. It may be used internally or per clysma, and the worms will soon disappear without returning.—*Therapeutische Monatshefte.*

AN OXFORD DEGREE FOR DR. BILLINGS.—According to the *N. Y. Med. Jour.*, the University of Oxford will confer an honorary doctorate on Dr. J. S. Billings, U. S. A., in consideration of his valuable labors in connection with the Army Medical Museum and Library, the *Index Catalogue* and the Johns Hopkins Hospital.

THE JOURNAL OF THE NATIONAL ASSOCIATION OF RAILWAY SURGEONS is a new monthly to us. It has reached No. 1 Vol. 2. This number gives us the proceedings of the Association of which it is the official organ. Railway surgeons seem to be practical folks, at any rate, as we observe by the papers and discussions. We do not know that in the Southeastern Atlantic States there are any regular railway surgeons. In our section he would have little to do. This journal was formerly the *Fort Wayne Journal of the Medical Sciences*.

SKIN DISEASES treated by External Application of Acetanilid. A. H. Newth, M.D., *Lancet*, April 6. My usual plan is to prescribe it with lanoline or vaseline in the proportion of twenty grains to the ounce, combined with other ingredients that seem applicable to special cases. In obstinate irritable ulcers it soothes the pain and subdues the inflammation. In psoriasis, combined with some mercurial preparation, it acts like a charm. I have also tried it in erythema, erysipelas, eczema, herpes, urticaria and other complaints associated with considerable irritation, and have found it a most useful adjunct to suitable remedies.—*N. Y. Medical Abstract.*

MALARIA AND ARSENIC.—Dr. Ricchi, Bologna, *Brit. M. Journal*, April 27. The experiments were made in districts where the disease was particularly rife. Of 2,501 men, 579 were suffering from acute and 1,384 from chronic malaria. The remaining 538 were free from the disease, as far as persons can be so who live with scarcely any hygienic precautions in places where it is epdemic. In the acute cases arsenic was of little use, but it gave excellent results in the chronic cases, and in the others it seemed to confer immunity, or, if they contracted the affection, it was of a mild type and was easily cured with quinine. The men put on flesh and lost the pallid, cachectic look characteristic of dwellers in malarial regions. There can be no doubt that "the daily administration of arsenious acid increases the resistance of the organism to the action of the microbes of malaria." The drug must be given in time and continued as long as may be necessary.—*N. Y. Med. Abstract.*

The leper house at Jerusalem has been seventeen years in operation under the care of the Moravians. Their new asylum, built at a cost of $21,000, has 19 inmates, 13 males and 6 females, including 11 Moslems and 8 Christians. There were three deaths last year. The expenses for 1888 were $2,200, about $100 annually for each inmate.—*N. Y. Medical Journal.*

The election of Dr. E. M. Moore, of Rochester, for the presidency of the American Medical Association will be regarded throughout the country with universal satisfaction, both for his personal worth and in recognition of his valuable contributions to practical surgery. It is the crowning honor of a long career devoted to the furtherance of the best interests of the profession and to the material advancement of surgical knowledge. Nashville as the place of meeting has the merit of being central and accessible from all directions.—*Medical News.*

The American Medical Association Meeting.—For the first time in a quarter of a century the American Medical Association has met in a New England State, and for the first time in its history in the State of Rhode Island. While the gathering was not large in comparison with those of previous years—probably not over 600 members were in attendance—yet all parts of the country were represented. The beautiful town of Newport was in attractive garb, the weather was perfect, and the arrangements by the Committee for the comfort and convenience of the members in all matters pertaining to the meeting were admirable.—*Medical News.*

Eczema has been partly cured by vaccination. J. Howell Thomas (*Brit. Med. Jour.*, January 19) says: "In November, 1884, a child was brought under my care with eczema and was covered with it from head to foot. It was the very worst case I had ever seen. I treated the child in the usual way for about six months, but with no benefit. I then advised vaccination. This the parents refused, stating that the vaccination officer had repeatedly postponed the vaccination. From this time I lost sight of the child for about two years, when the mother again brought her to me. I found the child in the same state—one mass of eczema. During the two years it had been attending at the Northampton Infirmary as an out-patient. I again advised vaccination, and this time the mother consented. I procured some calf lymph and vaccinated in the usual way in four places. At the end of a fortnight there was a slight improvement, and now (three months after) there is a decided and marked improvement.—*N. Y. Med. Abstract.*

SALOL.—In catarrhal pharyngitis (Thorner), 10 to 15 grs. three times a day: mixed with iodoform (Barduzzi) as an application in skin diseases: in acute rheumatism (Bradford) inferior to salicyl. sodium: dysentery (McCall), boy of five years, 200 grs. in ten days.—*N. Y. Med. Abstract.*

A NEW ANTIDOTE FOR MORPHINE.—Bokai (*International Klin. Rund.*), on the ground of physiological action, advocates the use of picrotoxine as an antidote for morphine poisoning. The action of picrotoxine on the respiratory centres is directly antagonistic to that of morphine, the former exerting a powerful stimulating effect, while the latter tends to paralyze these centres. Death in morphine poisoning is usually due to paralysis of the respiratory organs, hence the antidote should be indicated as a valuable remedy to administer. Picrotoxine is also a powerful stimulant to the vasomotor centres· Morphine rapidly reduces the blood-pressure; we have here, therefore, another valuable antagonistic action in the new antidote. Both drugs have a distinctly contrary action on the cerebrum. Bokai suggests that, previously administered, this drug might reduce the danger of asphyxia in chloroform narcosis.—*The Polyclinic.*

TREATMENT OF YELLOW FEVER.—Sternberg (*Ther. Gaz.*) suggested in 1888 the following plan of treatment: Bicarbonate of soda, 150 grains; corrosive sublimate, 3-10 grains; pure water, one quart. About 1¼ ounces of this to be given every hour, ice-cold. The principal object was to test the alkaline treatment from the outset of the attack, in order to relieve the gastric distress and acid vomiting, and also to render the highly acid urine neutral or slightly alkaline. The bichloride was added, not to destroy pathogenic micro-organisms in the intestines, but as an antiseptic, which might be useful in preventing fermentative changes in the stomach, which might be favored by the administration of an alkali. The bichloride is, therefore, used only as an adjuvant. When this medicine was prescribed well diluted, the patients looked forward to the time it was to be administered, as they found the ice-cold drink allayed the irritability of the stomach. Sternberg suggests that the dose be still further increased, from which he expects to obtain even better results than were obtained during the last epidemic.—*The Polyclinic.*

THE ELECTION OF DR. PAUL B. BARRINGER TO SUCCEED PROF. J. L. CABELL IN THE MEDICAL SCHOOL OF THE UNIVERSITY OF VIRGINIA.

It has been known for some months that Dr. J. L. Cabell would resign his Professorship of Physiology and Surgery in the Medical School of the University of Virginia, and that his successor would be chosen during June of this year. We are gratified to learn that the Board of Visitors have elected Dr. Paul B. Barringer, of Davidson College, to the vacant Chair, and wherever it is known in North Carolina this appointment will receive the warmest approbation of the profession.

Dr. Barringer will bring to the Chair he is about to occupy eminent fitness as a teacher, ripeness of scholarship, a broad and thorough knowledge of the branches he is to teach, a vigorous intellect, thoroughly alive to the progress of true science, and a moral character which he will not fail to impress on the members of his classes. Next to having a medical school at our own University, the Medical School of the University of our sister State, whose standards we have already proven to be equal to the best, with one of our own number chosen to fill an important professorship, we deem this arrangement to be one of the highest advantage to the coming generation of medical students, and to the profession at large.

We congratulate Dr. Barringer upon his new honors, and we wish for him a long and prosperous career.

* * *

Slag.—Crushed slag is proposed as a deodorizer of fæcal matter; said to be efficacious and cheap.—*N. Y. Medical Abstract.*

Rosin and Tar sent to Johnstown by the merchants of Wilmington has proven the very thing to apply to decomposing masses to accomplish rapid cremation without odor. Dr. Lee, executive officer of the Pennsylvania Board of Health, so commends it to the North Carolina Board of Health.

LOBELINE IN ASTHMA.

[*De la Lobéline dans la Thérapeutique d l' Asthme.*]

Dr. Silva Nunes, of Rio de Janeiro, sends us a valuable essay on the use of lobelin in asthma. He gives us eight cases in which he has used the drug, and gives us the following conclusions :

1. Lobeline does not possess the poisonous effects attributed to it.
2. It has no emetic or nauseant action like lobelia, being preferably employed in cases where the latter is indicated.
3. It was employed by Dr. Nunes in doses of 5 to 40 centigrams (7-10 gr. to 6.1-10 gr.) for adults, and from 1 to 5 c. g. for children (1-10 to 2-10 gr.). He does not fix upon this as being the largest dose, but only the largest he has employed.
4. Having no irritant action on the cellular tissue, it can be employed in hypodermic injections, which confirms its superiority over the tincture of lobelia.
5. The evident action of lobeline on the nervous system makes it useful in convulsive affections like tetanus.
6. The patients on whom he has used lobeline are completely cured.

All authors have accorded the action of lobelia to resemble that of tobacco, while the study of Dr. Azevedo Sodré gives a different result. Lobeline may be compared to *saponine* found in the root of *polygula senega*, and between the two there are marked points of resemblance.

The author does not consider the study of lobeline complete, but having initiated the dosage, he trusts that other observers will verify his results aud recognize its efficacy.

[If, as Dr. Nunes says, lobeline and saponine are similar in action, it certainly could not be suggested by what is known of their chemical appearances. It is not even known if polygalin and saponine are the same, as Dr. Nunes states, although it is possible that the therapeuticul action is similar. The larger dose given by him seems excessive if it resembles saponine.—Eds.]

QUINOLINI—Used as a gargle in diphtheria; 1 part to 50 of alcohol and 500 of peppermint water.--*Jour. de Med de Paris.*

BOOKS AND PAMPHLETS RECEIVED.

Osteotomy for Anterior Curves of the Leg, by De Forest Williard, M.D.

Constitution of the Medical Society of the State of North Carolina.

The International Medical Annual for 1889, published by E. B. Treat, N. Y. Price $2.75. Pp. 544.

Handbook of Therapeutics, by Dr. Sydney Ringer. Published by Wm. Wood & Co., N. Y. Pp. 524.

American System of Gynecology, by Dr. M. D. Mann. Published by Lea Brothers & Co., Philadelphia. Pp. 789.

Lecture on Nervous Diseases, by Ambrose L. Ranney, A.M., M.D. Published by F. S. Davis, Philadelphia. Pp. 778.

Yellow Fever; Absolute Protection by Scientific Quarantine, by Dr. Wolfred Nelson, 32 Nassau street, New York. Pp. 50.

On Some Mild Measures in the Treatment of Intra-Nasal Hypertrophies and Inflammations, by Dr. W. H. Daly, Pittsburg, Pa.

Surgical Operations, by W. H. A. Jackson, F.R.C.S. Published by P. Blakiston, Son & Co., Philadelphia. Pp. 1006. Price $5.00.

The Sanitary and Economic Disposal of Garbage and Refuse, by the U. E. and C. Co., Buffalo, N. Y. Pp. 23. Bound in leather, etc.

On the Relation of the Nasal and Neurotic Factors in the Ætiology of Asthma, by Drs. Bosworth, Shurly, Daly and Smith. Pp. 20.

Theory and Practice of Obstetrics, by Drs. Cazeaux, Tarnier and Mundé. Published by P. Blakiston, Son & Co., Philadelphia. Pp. 1221. Price $5.00.

Kirke's Handbook of Physiology. Twelfth Edition, by W. Morant Baker, F.R.C.S., and Vincent D. Harris, M.D., London. Published by Wm. Wood & Co., N. Y. Pp. 784.

Rhode Island Thirty Fifth Registration Report.

Biennial Report of the West Virginia State Board of Health.

Report of the Health Officer of the District of Columbia for 1888.

New York Cancer Hospital, Fourth Annual Report for the Year 1888.

Sixteenth Annual Report of the Board of Health of the City of New Haven, Conn., for 1888.

Wood's Medical and Surgical Monographs. No. 3. Vol. 1. Published by Wm. Wood & Co., N. Y.

Annual Report of the Health Department of the City of Baltimore, Md., for the Fiscal Year Ending December 31st, 1888.

The Question of Relationship Between Lichen Planus (Wilson) and Lichen Rubra (Hebra), by A. R. Robinson, M.B., L.R.C.P.

The Perineum; Its Anatomy, Physiology and Methods of Restoration after Surgery, by Henry O. Marcy, A.M., M.D., LL.D., of Boston.

Leaflets from tae Note Book of an Archeological Traveller in Asia Minor, by J. R. Sittington, Ph.D. Published by the *Bulletin* of the University of Texas.

The Physician's Pocket Day Book. Designed by C. Henri Leonard, M.A., M.D. Price $1.00. The Illustrated Medical Journal Company, Detroit, Michigan.

The Efficacy of Filters and Other Means Employed to Purify Drinking Water a Bacteriological Study, by Charles G. Currier, M.D., of New York. Published by the *Medical News*.

Diphtheria, Its Nature and Treatment, by C. E. Billington, M.D., and Intubation in Croup and Other Acute and Chronic Forms of Stenosis of the Larynx, by Joseph O'Dwyer, M.D. Published by Wm. Wood & Co., N. Y. Pp. 326.

Increase of Blindness.—Dr. Howe. of Buffalo, shows from statistics that in New York State blindness is rapidly on the increase. This increase is chiefly among the immigrant population, especially the Irish, and is wholly due to ophthalmia neonatorum, an absolutely preventable disease.—*The Polyclinic.*

READING NOTICES.

F. H. **Venable**, M.D., Prospect, Va., Va., writes: "I have used Lactated Food in a case of gastritis where the stomach was in such a condition that no other food could be tolerated. The result was highly satisfactory to both the patient and myself. It was retained and digested without any inconvenience."

Irregular Menstruation—T. J. R. Clarkson, L.R.C.P. L.R.C.S, Pately Bridge, Leeds, Eng., says: "My experience with Aletris Cordial is limited to one case. The patient, a young lady of 21 years of age, had never in her life been regular, the flow being very scanny. One dose brought on the discharge, which was more profuse than any she had experienced. She has been regular since. Of course it is difficult to believe that one dose could bring about this result, but nevertheless the fact remains that she has been regular since taking it, a thing she never was in her life before. I shall be glad to write you after a more extended trial.

Messrs. Reed & Carnrick, St. Louis, Mo.:—*Gentlemen*:—I have been much interested in the study of the milk question, as it affects infants who are deprived of their mother's breast, and have discussed it editorially and otherwise. This summer I have had the question forced upon me practically, as the result of the illness of my wife, necessitating the weaning of our baby and supplying her with some artificial substitute. I have thus given a practical test of Carnrick's Soluble Food, and have been perfectly satisfied with the result, as our little one has thriven on that food, I think, as perfectly as if the mother had been able to nurse her. Though this has been her "second summer," she has not had any disturbance of digestion or tendency to diarrhœa at all.—*Dr. E. M. Nelson.*

NORTH CAROLINA

MEDICAL JOURNAL.

THOMAS F. WOOD, M. D.,
GEO. GILLETT THOMAS, M. D., } Editors.

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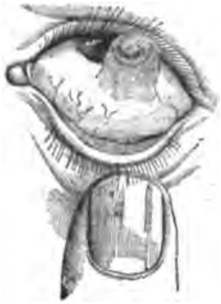
ORIGINAL COMMUNICATIONS.

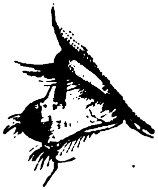
REPORT OF A CASE OF DERMOID TUMOR OF THE CORNEA AND SCLEROTIC.

By Kemp P. Battle, M.D., Raleigh, N. C.

J. J., a colored boy fourteen years of age, applied for treatment March 18 for a congenital growth on the eye, which had been slowly, but steadily, increasing in size, was unsightly and interfered with vision. The tumor occupied the lower and outer third of the cornea, encroaching upon the pupil nearly to its center, and a still larger space on the adjoining sclerotic. Its shape was hemispherical except that the lower part was prolonged downward under the lower lid, the broadest part being at the point of attachment to the normal structures. The transverse diameter of the base was ten millimetres, of the vertical twelve. The surface was smooth and pinkish except towards the apex, where it approached very nearly to the character of ordinary cuticle, being roughened and pigmented and bearing several short black hairs. The tumor was very dense in structure, but, though solid, the surface could be easily depressed, and there was a deceptive feeling of fluctuation. It was slightly movable where united with the sclerotic, but firmly fixed upon the cornea. Vision in this eye was $\frac{20}{200}$, in the other $\frac{20}{20}$.

The situation and size of the growth are represented in the accompanying cuts :





In preparing for the operation ether was preferred to cocaine because of the youth of the patient and the delicate nature of the work required. It was necessary to have complete control of the movements of the globe. It had been found, moreover, by trial, that a four per cent. solution of cocaine had little effect upon the dermoid tissue.

The dissection was begun with fine-pointed scissors, but in cutting away the corneal portion of the tumor the most suitable instrument was found to be the short, curved, round-pointed knife made for scarification. The separation from the sclerotic was easily accomplished, but, owing to the abnormal tissue being deeply imbedded in the cornea and thoroughly incorporated with it, some thin remnants of the growth were left, as is unavoidable from the nature of such cases. The part of the cornea not involved was thin, and it was necessary to guard against the introduction of the knife into the anterior chamber. There was some bleeding from a small artery, but this was promptly stopped by torsion, and the loss of blood from the operation was trifling in amount.

The boy did not report himself for inspection as regularly as directed, and as the wound healed a point of exuberant granulation sprung up at the situation of the artery which had been twisted. This grew until, when he was next seen, there was a growth like a toadstool in shape—the pedicle being very short and the expanded surface five millimetres in diameter. The pedicle was snipped with scissors and the point of attachment for several days afterwards was touched with solid nitrate of silver, and healing progressed without further trouble.

Solid dermoid tumors are comparatively rare, much more so than the better known dermoid cysts often seen in the neighborhood of the eye. They are congenital, and since the anterior parts of the eye-ball are formed in fœtal life from the external integument, the theory that they result from an imperfect development is no doubt correct. This is further indicated in the present case by the fact that there were congenital malformations in neighboring parts. A flattened teat, about half an inch long, of cartilage and skin, was attached to the anterior aspect of the tragus. These dermoids are not often found larger than in this instance, but are generally smaller and usually situated on the sclerotic. Nor do they always have a tendency to enlargement, and so, even when situated partly on the cornea, they may never extend towards the pupil. In such cases the chief indication for an operation is the correction of an unsightly deformity, since the sight of the eye may never be interfered with.

THE MENTAL FACTOR IN THE CAUSATION AND CURE OF DISEASE—BEING THE ANNUAL ORATION BEFORE THE MEDICAL SOCIETY OF NORTH CAROLINA AT ITS THIRTY-SIXTH ANNUAL MEETING.

By R. L. PAYNE, Jr., M.D., Lexington, N. C.

(Read before the Medical Society of the State of North Carolina, at Elizabeth City, April 16, 1889.)

Mr. President and Gentlemen of the Medical Society of the State of North Carolina:

It is with mingled feelings of pride and trepidation that I attempt to address an audience representing the combined intellect of the medical fraternity of North Carolina. Long years ago, when my revered father came home from one of your meetings and announced to his waiting family that he had been chosen your orator, I (the little boy standing by) felt that a distinct epoch had occurred in our family history, and my little heart, swelling with pride in the dear parent, in childish imagining I wondered if to be the orator of the North Carolina Medical Society was not the culmination of earthly distinction. Can you wonder, then, that from that hour my heart was filled with longing to be one of your number, or need I tell you how insidiously the ambition crept into my very being that I, too, might deserve some honor at your hands?

And now, fellow-members, though the lapse of years nd the facings of life's stern realities have served to dispel so many illusions of my childhood, time has only intensified my admiration for this Society, made up, as it is, so largely of men of profound learning, broad philanthropy and exalted religious conviction, and my pride in being your orator to-night, would know no limit, acknowledge no bound, were it not tempered and chilled by the feeling of my entire incompetence to do you, in the smallest measure, the honor which my heart teaches me you deserve and the occasion demands.

Oh, how, with untold longing, I crave, for this one time, at least, the divine gift of eloquence! And how utterly destitute and inadequate are the feeble words that come faltering into expression! The hour was made for genius! The occasion is one suited to the display of the most profound intellectual attainment, the most brilliant scintillations of wit, the highest oratorical power, and therefore before it I stand confused, abashed.

Oh! thou ethereal spirit of eloquence divine, come now, if but for the nonce, and touch with thine animating power these faltering lips! Instill within me but a drop of thy divine essence, that I may speak thy language this night!

Alas! alas! the invocation is all of no avail, and with many misgivings I approach the study of that theme which I trust you will not deem unworthy of your consideration—

THE MENTAL FACTOR IN THE CAUSATION AND CURE OF DISEASE.

I think I may submit as an axiom that, to what extent and in whatever direction the legitimate practice of our profession fails to come up to the needs of the public or to gratify the curiosity of the people at large, to that extent does charlatanism thrive, and in that direction does quackery find its most congenial soil. I think I may further submit that no error can long be promulgated with success unless it has some element of truth as its basis, and therefore the success which has attended such absurdities as cure by the royal touch—the mad-stone—the mind-cure—and the sometimes remarkable results attained by the so-called Christian scientists by the "laying on of hands and anointing with oil," bespeak the attention of thoughtful physicians as wonderful evidences of the controlling influence of the mind over the body.

Let us but realize that "there are over thirty 'faith-homes' in America te-day; that in England and on the continent of Europe can be found a larger number—some of these commodious institutions, with a history of many decades of years." That these institutions are handsomely supported by a credulous public, and that in these faith hospitals are brought about many remarkable cures of real and fancied ills, and then, since it is apparent that these cures are wrought through the agency of strong mental impression, we can but feel there is something practical in the question, Have we, as physicians, given a proper degree of consideration to the mental factor in the causation and cure of disease?

Watch the hypochondriac, as he sits wrapped in his own gloomy anticipations, or study the legerdemain of the conjurer hysteria, and tell me how much of the disordered function, the disturbed secretion, the faulty digestion, the contracted limbs, the chokings, the chillings and flushings are due to pathological change, and how much to disordered imagination and impaired will power.

On the other hand, no unbiased student can doubt that Perkin, with his tractors; Prince Hohenlohé, with his prayers; the waters of the sacred spring at Lourdes and the mental effect of pilgrimages to any one of an hundred noted shrines, has often brought about the cure of disease, and it matters not that we may say to ourselves, "'Twas but the effect of the imagination;" the fact remains that in many well authenticated cases the maladies were in no wise imaginary, but the result of true pathological change.

The medical systems of all barbaric nations owe most of their potency to the effect of strong mental impression, and to-day, in our own civilized land, there is scarcely a hamlet which does not boast some much revered dame who, with mystic wands, "cures for erysipelas" or gives relief to painful burns by "blowing the fire out."

The success which has attended water-cures and steam doctors, ay, much of the good of the electric-current and of the now popular massage, and perhaps all the happy ends attained by the little sugar pills of our homœpathic friends should be attributed to a mental agency. Upon one occasion a lady of my acquaintance (and quite an intelligent woman she was) suffered from a neuralgia which proved intractable to the recognized remedies applied by one of our own profession. At the solicitation of a friend she procured some homœpathic pellets—a sure cure for neuralgia—and on the same day she received some flower-seed from a friend. Suffice it to say that in a few short hours she was cured. The pain had vanished and she began to sing a song in praise of the new medication which knew no ending till a few weeks later, her flowers not putting in an appearance, investigation showed she had sowed the pellets and swallowed the seed.

In the days when mesmerism occupied the public fancy many cures of various maladies were attributed to its agency, and to-day, under the new nomenclature of hypnotism, some of our most skilled neurologists assert its power to subdue otherwise intractable ailments. In England for centuries scrofula was cured by the royal touch, and history tells us that in 1744 the prospect of a naval engagement between the British and allied fleet had the effect of checking the scurvy.

Our own Dr. Rush, than whom few greater or more competent observers have ever lived, records many cures effected during the exciting days of the Revolutionary War through a mental agency, and the celebrated case reported by Sir Humphrey Davy, in which a paralysis was relieved by the daily insertion of a clinical thermometer under the patient's tongue, is a familiar example of what hope and confident expectation may accomplish.

The power of attention fixed upon a part to effect nutritive change is well illustrated in the story of Bacon's warts. The warts were removed by a lady who, rubbing the new growths with a piece of fat meat-skin, nailed the skin to the post of a window with a southern exposure and confidently promised the great philosopher that as the fat dried up from the skin his warts should disappear. Bacon was aroused into a state of intense expectancy, his mind being constantly centered on the warty growths, and in a short time he was rewarded by their disappearance. And thus, while history abounded with well-authenticated cases illustrating the restorative power of certain mental states which might be cited here did time but serve, the poet's muse catches the idea of pschyco-somatic change, and all will recall the Prince in Longfellow's beautiful "Golden Legend"—

"Healed, in his despair, by a touch of St. Matthew's sacred bones."

Again, who, in his own observation, has not seen the emotion of love inscribe on its victim such changes as Bulwer describes in his "Lady of Lyons"—

"The man who sets his heart upon a woman
Is a chameleon, and doth feed on air:
From air he takes his colors, holds his life—
Changes with every wind—grows lean or fat—
Rosy with hope, or green with jealousy,
Or pallid with despair."

Or who has not seen some love-lorn youth like the one in Byron's "Dream," who

"Upon a tone,
A touch of hers, his blood would ebb and flow,
And his cheek change tempestuously."

Few physicians, however, will be willing to admit the sentiment of the young poet Churchill—

"The surest way to health, say what they will,
Is never to suppose we shall be ill;
Most of those ills, we poor mortals know,
From *doctors* and *imagination* flow."

Alas! alas! the poet himself died of a fever at the early age of thirty-four, unprotected by his faith that he should ne'er be ill; but whether or not he was assisted in his demise by a doctor, this deponent wisheth not to say.

Turning aside, then, from this brief illustrative record, culled from general literature, let us consider the question as physicians, and we find that the various secretory organs of the body, and, indeed, all the involuntary muscular movements are powerfully influenced by mental impressions of an emotional character.

What is the tear of grief but emotional stimulation of the lachrymal gland! Who has not felt his mouth become dry and parched when under the inhibition of sudden fear the salivary glands cease to pour out their accustomed secretions? Maternal tenderness finds one of its expressions in increased secretion of the mammary gland, while almost every mother who has known a great grief knows full well its effect in diminished secretion of milk, and every physician of experience has perhaps been called upon to relieve the distress of an innocent babe sickened, perhaps, even unto death, by drinking a mother's milk poisoned by violent anger or other extreme excitement. Every dyspeptic knows that after violent anger or sudden fear his woes are all increased, but not all are physiologists enough to understand the reason is deficient secretion of the gastric and pancreatic juices as a result of their emotion.

Dr. Beaumont, whose well-known studies of the digestive act through a fistulous opening in the stomach of Alexis St. Martin forms the basis of all we know of this process, tells us "that anger or other severe mental emotion would sometimes cause its inner or mucous coat to become morbidly red, dry and irritable, occasioning at the same time a fit of indigestion," and almost all of us know something of the unhappy association of melancholy and biliousness. Carpenter writes that jealousy will vitiate the quality, while it increases the quantity, of bile secreted. In this connection Dr. Budd, in "Diseases of the Liver," speaks of jaundice occurring as a result of mental shock or long-continued anxiety or grief, while Murchison declared that "there is good evidence that nervous agencies may not only cause functional derangement, but cure structural disease of the liver. Acute atrophy, in which the secreting cells are rapidly disintegrated, * * * appears in many instances to have a purely nervous origin."

But you ask how, then, do the emotions affect secretion? In two ways: by stimulating or inhibiting the flow of blood to the part, and by increasing or diminishing the innervation. That the emotions may produce both natural and abnormal movement in the voluntary and involuntary muscles there is no question, and the effect of the mental state on the facial muscles gives to the physiognomist all of his power.

Who does not know the face of joy, the eye of pride, the look of grief, the expression of despondency or the mild lineaments of humility, or who has not looked with a shudder on the vile wretch whose features, like those of Bertram, in "Robeky," showed that

"Evil passions cherished long
Had ploughed them with impressions strong."

Darwin has made a most beautiful study of the muscular groups called into action by the varied emotions, and Tuke has well observed, "The predominance of one emotion * *. * may determine the settled character of the features."

Again, who has not felt his heart go bounding with increased activity under the influence of some sudden joy or sink within him when seized upon with fear? Watch the maiden's blushes as kindling in her cheeks

"Ten thousand little loves and graces spring
To revel in the roses,"

and know that, as they trembling come and go, vaso-motor paresis pays tribute to affronted modesty.

As might be expected, also, the emotions may produce disease in the muscular system. Tuke has collected many cases of epilepsy produced by anxiety, fear and grief; of paralysis agitans and chorea as a result of excessive anxiety, grief and even joy, while a sudden shock, as of fear, may so disturb the motor centers as to develop a true paralysis. Again, a sudden shock of fear or an excessive grief has been known to so interfere with nutrition as to cause in a single night a blanching of the hair and a succession of horrors experienced in the wrecking of a train of cars has cured in a few moments time an acute articular rheumatism.

But lest I weary you with these evidences of physical change produced by emotional causes, let us consider the question, Can conditions purely intellectual effect nutrition and other bodily functions!

If one of you should prick his finger with a sharp point a message would at once be telegraphed along the sensory nerve and the proper center in the brain would form the idea of pain. None the less true is the converse of this proposition—the idea of pain arising in the sensorium, the sensation of pain may be felt in peripheral parts. In other words, "ideation immediately acts on sensation as sensation acts on ideation."

The expectation of pain greatly increases the degree in which we experience that sensation, and on the other hand, the belief that we shall experience none, or at least very trivial, pain under given circumstances, will serve very materially to lessen sensibility.

Perhaps all of you have seen the travelling mountebank announce his ability to extract teeth painlessly, and then, rubbing some perhaps inert fluid on the gum, quickly extract a refractory molar with but slight protest from the patient. In such instances the person being assured he shall have no pain, and trusting fully in the operator, will truthfully declare the operation hurt but little.

In this connection may be mentioned those cases in which persons, chiefly of hysterical temperament, believing they were inhaling ether, have been known to become so anæsthetized as to bear painful operations without experiencing any sensation of pain whatever.

Expectant attention fixed on an organ associated with the belief that certain results will accrue, is often sufficient to produce such results. One expecting a given article to nauseate when taken into the stomach, will almost surely experience that sensation if he does not actually vomit.

No organ can functionate properly when subjected to constant surveillance, and woe be to the man who forms the habit of daily counting his pulse, and who, on rising in the morning, must always carefully scrutinize his tongue. That man, though he be not sick, will soon become so, and if he but add to his armamentarium a clinical thermometer, and note the diurnal variations of temperature, I promise you, my good doctors, another patient, at least another devotee at the crowded shrine of hypochondriasis.

The association of ideas will often prove sufficient to produce like sensations. A case is on record in which a boy, being extremely seasick, a blind fiddler sought to relieve his woes by playing on his violin, and for years thereafter the music of a violin always caused the lad to feel intense nausea, and, illustrating differently, when your speaker was a child a familiar experience it was to be awakened at night by the anxious parents to take a dose of calomel and rhubarb mixed in quince or apple jelly, with the almost inevitable result of provoking emesis, and to-day all jelly tastes to me like rhubarb, and is as efficient an emetic as would be ipecac.

The heart increases its pulsations under expectant attention, and no doubt many of you had valvular troubles when, during the course of your medical studies, the lecturer considered diseases of that organ.

The effect of fixed attention upon the circulation of a given part is nowhere better illustrated than in the case of the religious enthusiast Louise Lateau. From infancy she was constantly given up to religious devotion, and her thoughts seemed ever centered on the griefs of Golgotha. "One night, April 1st, 1868, she fell into a state of ecstasy and constantly talked in a religious strain. She saw the virgin and several of the saints. This condition lasted till the 21st, and was followed by the appearance of the stigmata. Blood oozed from the left side on Friday, the 24th; it returned on the Friday following, when blood also transuded from the feet; and on the following week from the palms of the hands likewise. Lastly, on the following Friday, these hemorrhages returned until September 25th, when, for the first time, blood flowed similarly from the forehead." These phenomena were frequently repeated subsequently during several years, and as they were made the subject of a painstaking investigation by a commission of the Royal Academy of Belgium there is no doubt of their authenticity. Sympathy and imitation frequently produce physical effects.

Hysterical women are apt to have convulsions whenever they see anyone else convulsed, and so chorea is often epidemic in schools and other places where children are assembled together, and no doubt many of you will recall Weir Mitchel's cases of respiratory spasm resembling croup, the evident result of the imitation of children really suffering from croup. Paralysis in nervous individuals is by no means infrequent as a result of the mental state, and Paget, Skey and others record many cases of hysterical joint, in which the imitation was so perfect as to be almost indistinguishable from true disease, due, no doubt, to the baneful effect of an idea; for, in the language of Sir Benjamin Brodie: "The symptoms may frequently be traced to the circumstance of the patient's attention having been anxiously directed to a particular joint."

Think, too, of the power of the will to control and direct muscular movement. Cases are on record in which, by simple effort of volition, persons have been able to control the dilatation and contraction of the pupil, while in occasional instances a man has been known to even stop for a time the action of the respiratory and cardiac muscles.

Your speaker once saw a short negro man who would make his heart stop beating for a dime. Seating himself in a chair, his whole body was gradually thrown into a state of tetanic rigidity, and as soon as this rigid state was attained pulsation could no longer be felt in any superficial artery. Careful auscultation revealed occasionally faint respiratory murmurs, but the heart's sounds were absent or so enfeebled as to be unheard, even when listening most intently. Then, too, numerous cases are on record in which confirmed paralytics have been enabled to walk under the stimulus of sudden fear, while all of you will recall the dumb son of Cyrus the Great, who, seeing his father in imminent danger of his life, suddenly attained the power of speech and warned him of his danger. If, then, the mental state can effect physical change, if it is true that the varied emotions, the power of expectant attention, a controlling idea, a fixed belief, an intense sympathy, or a determined effort of the will, may effect such changes in the circulation and innervation as to modify function or change nutrition or stimulate muscular movement into action, who can measure, in the present state of our knowledge, how potent a factor the mind is in the causation and cure of disease. In this day, when the infinitesimal microbe and the puny bacillus have come to be looked upon as giants to be armed against, there is great danger that medical men, infatuated by those studies through which experimental pathology has made disease appear to be almost a tangible entity, will become forgetful that other factors are at work which cannot be subjected to the scrutiny of the microscope or tested by the reagents of the chemist. In the light of these studies, then, it becomes our duty, as physicians, to carefully consider the mental attitude of our patients. Picture to yourselves a man in constant fear of heart-disease, with his thoughts always centered on that organ, and unless something relieves his apprehension the inevitable result will be an increased flow of blood to the part, and an increased nutrition, an increased innervation and an increased activity of movement with the final result—hypertrophy. Do you not think one in constant fear of phthisis pulmonalis by centering the thoughts upon the lungs may keep up a congestion there which will prove favorable to the deposition of tubercle? How many dyspeptic patients can you cure who never eat without the fear of bad result, or who, after meals, instead of resting in calm content, occupy themselves with lively anticipations of evil, and note the slightest borborygmus as the herald of distress? Again, we should not only study the mental state of our patient in its causative relations, but it is perfectly legitimate, nay, more, it is our duty to seek—as far as may be consistent with the dignity and honor of our profession—to make such impressions on his mind as will aid in accomplishing his cure. One of our first efforts in this direction should be to gain and maintain the confidence of our patient. Here many of the little details of personal appearance come in as factors for good or ill. The physician who is slovenly in his habits of dress, who goes unshaven and with unkempt hair, or whose necktie stands awry, is cetrainly not apt to impress a patient as a very careful man, while the doctor who approaches his patient with soiled hands or with unpleasant odor, as of iodoform, or, alas! sometimes tobacco and whiskey clinging to his person to regale the senses, will sometimes make himself so distasteful to the delicate patient as to create a repugnance which will perhaps render his best skill ineffective. On the other hand, how potent for good is the mere presence of a physician whose neat appearance and agreeable conversation make his coming like a ray sunshine in the sick-room, and whose evident confidence in the potency of his remedies to effect good results cannot fail to create a reflex in the confidence of the patient. In parenthesis permit me to say that, in my own opinion, the therapeutic nihilist is the greatest curse to modern medicine. Himself without faith, he fails not only to inspire the confidence of his patient, but he grows careless in the administration of remedies, and relying, as he claims, on the *vis conservatrix naturæ* and the self-limitation of disease, he, failing to attain those ends which must accrue from judicious medication, brings our noble art into disrepute, and, pocketing the fees of patients he has but little right to believe he has benefited, he ranks, in my mind, almost with the "thief who cometh in the night." Again, much depends, not only in our knowledge gained as to the pathological condition, but also as to the impression we make upon the patient by the methods employed in making our examinations. Carefully interrogate each organ, auscultate, percuss, palpate, scrutinize the tongue, note the pulse and temperature, and investigate the secretions, and if you gain nothing beyond what you have almost intuitively determined, you have none the less impressed your patient with the idea that you have given his condition a proper study, and are therefore competent to treat him.

Do not hurry the patient too much in giving the details of his condition, and though it be unimportant, and oftimes a weariness in the flesh, "grin and bear it," for nothing so takes with the victim of imaginary ills as the doctor who will be a sympathetic listener, and this weakness is not unknown to real sufferers. Be kind, but firm, gentle in manipulation, but never fear to hurt when necessary to your patient's good. Be explicit in laying down definite rules to be observed in his management, and, if you are sure you are in the right, a little despotic in seeing that your directions are carried out to the letter, and thus you will have done much in securing that confidence without which your best efforts will fail. Again, offer your patient such mental distraction from his ailment as his condition will admit of ; see that he is diverted by pleasant conversation and society, and in chronic troubles send him away from home. The change of scene will divert him from his ills, and if he be able to bear the expense of a sojourn at one of the mineral springs, the liberal supply of water will aid in his restoration to health by flushing out all the drains and sewers of his system, even though, forsooth, the contained chemical be too infinitesimal to accomplish anything.

In as far as you can, consistently with truth, lead the patient to believe a given result will accrue, and you will have gone a long way in reaching the end of your medication. Excite his will-power, make him believe that much depends upon his own determination, and always remember to administer the cordial of hope. Hope! aye, who can measure its power to reanimate and vivify, to whip up the languid heart and send the blood coursing through artery and vein, to drive the nerve-fluid with electric speed, to awaken into renewed activity every organ and tissue, to smooth, though sometimes with delusive touch, the pillow of disease and pain. Hope! who with magic wand doth dispel our doubts and fears, and who doth line with silver sheen the dark cloud of despair! Hope!

"Thou beggar's wealth!
Thou lover's victory and thou sick man's health!"

A CASE OF SPONTANEOUS THROMBOSIS OF THE PULMONARY ARTERY FOLLOWING LABOR, WITH RECOVERY.

By John M. Faison, M.D., Faison, N. C.

(Read before the Medical Society of the State of North Carolina, at Elizabeth City, April 16, 1889.)

Mrs. J., aged forty years, mother of seven children, with good family history, was confined on May 12, 1889. Labor was easy, lasting about two hours, child about average size. Placenta was delivered at once with very slight hemorrhage. Extract ergot, fluid, ʒ j, with quiniæ, sulph. grs. 5 was given at once; extract ergot, fluid, gtt. 15 and quiniæ, sulph., grs. 5 were ordered to be taken night and morning, stopping the ergot after two days and continuing the quinine alone for one week.

I saw her again on the 2d, 4th and 16th days after confinement, and found her doing as well as possible. Bowels and kidneys acting regularly, lochial discharges normal, no pain and but little soreness about uterus, temperature normal to 99° and 99½°, pulse 80 to 85, and heart-sounds perfectly normal. I told her to report any changes in her condition.

On May 20th, the eighth day after confinement, I was hurriedly summoned, about 6 a. m., to see her, and found her sitting up in bed suffering severely with dyspnœa; face pale, with decided purple hue, especially about nose and mouth; extremities cold, pulse very weak and irregular, sometimes intermitting 135 to 150 per minute; respiration 40 to 50 per minute; temperature normal. On auscultation lungs were normal, air entering freely in front and behind. Percussion gave slightly increased resonance. Heart was beating tumultuously and irregularly, with a *decided grating* or *rasping sound* over the pulmonary artery, and confined to this place principally.

From herself and husband I gathered the following history: That she was doing splendidly since I saw her last and fell asleep about 9 p. m., and was awakened suddenly about 2 a. m. with a full, tight feeling in her chest, and was compelled to sit up in bed at once to get her breath, and thought she would die immediately from suffocation. So terrible was her dyspnœa and so evident her death therefrom, that he dared not leave her to go to a neighbor's house, about four hundred yards, to send him for me, lest she would be dead upon his return. Having some brandy in the house, he gave it to her very freely, and applied camphor and turpentine to her chest, which he thought had lessened somewhat the difficulty of breathing and lulled the pain over her heart. The dyspnœa, he said, was spasmodic, being more severe about every fifteen minutes, and while with her I noticed the same spasmodic course.

With these facts and my own observations, the presence of a blood clot, either in the right side of the heart or the pulmonary artery, obstructing the flow of blood to the lungs, was evident, and in that the peculiar grating or rasping sound was confined principally over the site of the pulmonary artery, together with the sudden attack of dyspnœa the short length of time since confinement, and the absence of a thrombus elsewhere which would degenerate into emboli, a diagnosis of spontaneous thrombosis of the pulmonary artery was made, notwithstanding its extreme rarity and the teachings of a good many authorities to the contrary.

Commending her husband for the good sense displayed in his treatment, without which I felt certain she would have been dead, I continued to stimulate her, giving brandy, sulphuric ether and ammonia by the mouth and hypodermically, and repeating them as freely and often as I dared, the ammonia being given not only as a heart stimulant, but also, if possible, to prevent a further clotting of the blood. Had she been of plethoric habit I would have bled her to relieve the venous circulation, but having suffered so much from nausea and vomiting during the latter three months of pregnancy, her general condition was such that venesection was beyond question. Morphia, sulph. ⅛ gr., and atropine, 1-120 gr., was also given, both as a heart and respiratory stimulant and to quiet the anxiety and horror of approaching suffocation.

This treatment, with counter-irritation to chest, with a liberal diet of sweet milk, milk punch and egg-nog, was continued *pro re nata.* On May 28, eight days afterwards, her improvement was scarcely perceptible except that the spasmodic course of the dyspnœa was less distinct, yet it was still threatening life. Pulse 120 to 130, temperature normal, bowels and kidneys acting moderately well and patient becoming more emaciated. The same treatment was continued, adding also potass. iodide, 10 grs., three times per day, which was increased to 15 grs., and then 20 grs., with the hope of dissolving the clot as rapidly as possible.

On June 6th, the end of the second week of her illness, her improvement was more perceptible; pulse slower and stronger, respiration less difficult and the rasping sound over pulmonary artery growing less distinct, all of which pointed to the slow absorption of the blood-clot. After a sudden change of temperature, with wind and rain-storm, bronchitis was contracted, with fever and cough, which added no little to the already existing danger, but after a few days it subsided under appropriate treatment, and she continued a slow, tedious and steady improvement.

On July 1st the potass. iodide was stopped on account of its disagreeable effects, and, as her progress had been so slow and tedious during this time and now continued as when giving it, I am unable to say whether or not the patient derived any benefit from its administration.

Nothing of special interest occurred during the latter part of her sickness.

On July 4th, the seventh week of her illness, she was able to lie down without increasing the dyspnœa, and ten days later could sleep lying down all night.

On August 10th she was discharged cured, and at this writing is perfectly well.

As regards the peculiar rasping sound over the pulmonary artery, it grew less and less distinct as her respiration became natural, and when discharged, and since that time, repeated examinations have shown heart-sounds normal. No phlegmasia dolens or other evidence of thrombosis elsewhere has as yet occurred.

Playfair thus enumerates the causes of thrombosis:

1. An increased amount of fibrine in the blood, amounting to one-third more during the latter months of utero gestation.

2. An impoverished condition of the blood as found in the puerperal state in the process of involution of the uterus, charging the blood with quantities of effete material.

3. A mechanical obstruction, such as a travelled embolus or detached vegetations from diseased heart-valves, around which as a nucleus a thrombus may form.

4. Post-partum hemorrhage producing a weak or stagnant circulation. This is the most common cause, and in the great majority of cases always present.

To the first two causes, to wit, an increased amount of fibrine and the impoverished condition of blood from quantities of effete material, together with the anæmic condition of patient, due to the excessive nausea and vomiting during the latter months of pregnancy, must we look for the causes of thrombosis in this case.

We must exclude embolism as the nucleus of the thrombosis, since there has been no evidence of a thrombus elsewhere which could degenerate into emboli, and besides, the obstruction occurring on the eighth day after labor, does not give time for this degeneration, as no case of sudden death due to pulmonary obstruction from a travelled embolus has been reported or verified by a post-mortem examination. A detached vegetation from diseased heart-valves must also be excluded, as there was no evidence of such valvular disease upon repeated examinations previous to the obstruction. Of course we must exclude, also, post-mortem hemorrhage, which is such a common antecedent that its absence is worthy of note, especially since some high authorities regard a clot in right side of the heart and pulmonary artery without an embolus as a nucleus, as a "mechanical and physiological impossibility." Virchow thinks a stagnant state of the blood the primary factor in thrombosis, and that the impulse imparted to the blood by the right ventricle is of itself sufficient to prevent coagulation. A post-partum hemorrhage would almost produce this stagnation, his primary factor; yet, without hemorrhage, an anæmic condition of patient, producing a weakened circulation, the anatomical arrangement of the pulmonary arteries (the artery breaking up at once into a number of smaller branches, which radiate at different angles, thus giving more surface to the blood with angular projections into the currents), with the conditions present in the puerperal state, as mentioned by Playfair (see above), will induce spontaneous coagulation in the pulmonary artery.

The results of post-mortem examinations also show firm leathery decolorized and laminated coagula which could not have been recently formed, which coagula are not deposits around emboli, in that death occurred previous to the nineteenth day, which would not give time for the process of degeneration.

Playfair records 25 post-mortem examinations of sudden deaths after delivery due to pulmonary thrombosis and embolism. In 7 of these cases there was distinct evidence of embolism and in them death occurred at a remote period after delivery—in none before the nineteenth day. In 15 of these 25 cases there was no evidence of embolism, and death occurred no later than the fourteenth day, and generally in the second and third days.

My experience and obsrevation is limited to a single case of sudden death after delivery, which occurred in my brother's practice. It may be of interest to mention it. He was called for hurriedly, and being absent, I attended the patient, whom I found dead upon arrival at her home. She had been delivered twenty-three days previous to her death. Phlegmasia dolens developed in right thigh and leg two weeks after delivery. Her husband stated that she was getting along very comfortably and lying in bed talking to him, when suddenly she began to breathe with some effort, and continued to grow worse, complaining with fullness and tightness in chest and some pain over region of the heart. He at once sent for my brother. She continued struggling for breath, getting worse every minute, and died within an hour after first attack.

This was evidently a case of blood-clot in right side of heart or pulmonary artery, due to a travelled embolus from the degenerated thrombus in right leg. No post-mortem was allowed to verify diagnosis.

SELECTED PAPERS.

A MURDERER'S DYING CONFESSION DISPROVED BY SURGICAL AND ANATOMICAL FACTS.

By Benjamin E. Cotting, M.D., etc., of Massachusetts.

On the afternoon of July 1st, 1874, a woman, 22 years of age, of no very uncertain character, was brought to the Boston City Hospital. She was completely paralyzed on the right side; seemed nearly or wholly unconscious; and had fearful and bloody injuries about the head. The story that came with her was that she had been found in this condition, a few hours before, in her "own hired" room, and in her own bed. When found she was motionless, and was at first supposed to be without life. Her head, neck and shoulders were red with blood: and under them the pillows, sheets and bedding were saturated with it. This blood had flowed freely from a number of open wounds on the left side of the head; but there was no spattering on the walls or objects near by. She was lying on her right side, with her face towards the middle of the room, in the exact position apparently that she had taken on first going to sleep. Her night-gown and the bed-clothing about her body had not been perceptibly disturbed. Her day garments and smaller articles were orderly distributed about the room, as left on retiring. There was no sign discoverable that indicated the presence of any other person during the night. The room-door was locked, and the key remained in the lock on the inside. The windows were closed, but one was found unbolted. Through this a person could have entered, or escaped, as the room was on the ground-floor; yet a most diligent search failed to reveal even the slightest evidence that anything of the kind had been done. At what hour she retired no one could tell; and no response had been gained to repeated applications to her door in the course of the forenoon. Although an adjoining room on the same floor had been occupied that night, its inmates declared that they had not heard a groan or a sound from her apartment.

So far as known she had not an enemy; yet doubtless had angered some one, inasmuch as an unrecognized man had asked for her the evening before, and, not finding her at home, had vowed terrible vengeance as he left the house.

Who did the deed, and what the instrument, were mysteries that seemed at the time to be past finding out.

On examination at the hospital several extensive and complicated fractures of the skull were discovered, with considerable depressions, thought to be chiefly in the outer tablet, and not to require trepaning. On and through the scalp were a number of bleeding wounds—the hospital record says "nine on the left side of the head, besides several others near the left ear, which cannot be separated." The ear itself was "grealy lacerated," caught as it must have been several times on the edge of the instrument when it passed into the scalp. Its helix also, with the cartilage, was cut through at its anterior upper part. These wounds were all of a curved or crescent shape, clean cut, each "little more than an inch long." From two of them "brain substance protruded in a mangled state;" and into one of them, the only one mangled, the finger could be passed, and carried through the broken skull to a considerable depth, without force, in the injured brain—the record states "fully two inches," and Dr. Cowles markedly (on his finger) confirms this statement. The lines of these wounds turned generally in one direction, inclining towards each other at various small angles; in several instances running together or crossing; some mingling in a confused or inseparable manner—particularly at the spot where the finger could be passed into the brain. The little points or tongues of skin, wherever these wounds crossed each other, were perfect to their very tips, and showed no sign whatever of rent or bruise.

The hair was very long and very thick: "We noticed it," Dr. Cowles writes, "to have been cut off quite sharply in correspondence with the cuts in the skin. . . . I am quite clear as to the cutting of the hair."

From the worst wound (it being, indeed, where were several of those "which cannot be separated") a few fragments of bone of considerable size were taken; and from just within the external opening of the wound some chopped hair, mixed with the mangled tissues there, required removal. The injuries to the bones, including depressions, were estimated to be within an irregular space of about three inches long and nearly or quite two inches wide, somewhat semicircular at its upper or widest part. The external wounds or cuts, also, with one or two exceptions, particularly one in the occipital region, were within the limits of such a space. There were no wounds on top of the head, or any other part of the body.

Now, it is evident that a first blow must have instantly stunned and paralyzed this woman—else there would have been movement of her body or derangement of clothing, of which there was neither. This blow may have been given by a bludgeon, a mallet or a hammer of suitable size, form and weight. Such blow repeated would naturally extend the fractures, comminute them, and cause any amount of depression in the bony skull. But open wounds in the fleshy scalp by such instruments would as naturally have crushed or bruised edges, and the blows that made such wounds would have caused a spattering of blood all about—not the free bleeding which in this instance blanched the victim and saturated everything near by.

To account for the fractures and depressions then did not seem so very difficult—any heavy club might answer. But what produced the curved and curiously situated incisions was a more difficult problem; and experts, professional and lay, called upon to solve it, as well as detectives and friends, all failed to suggest an adequate solution.

Several days after her admission, Dr. Cowles, superintendent of the hospital, called me in, as a consultant, to look at these wounds, to see what I could make of them. The parts had been shaven and fomented, The surface of the skin was quite smooth and uniformly convex—still notably swollen—the swelling covering rather more than the space originally thought to include the injuries to the skull bone. Some of the cuts near the ear gaped a little, but the others were generally in a satisfactory condition, and all had the appearance heretofore described. After hearing the whole story, and a careful consideration of the matter in all its bearings, I suggested that such wounds required a sharp instrument (as all admitted), and that the deed had been done by a mechanics' inch-wide *gouge*—a tool resembling a chisel, but having, instead of a flat, a "hollow" cutting blade, a longitudinal third or trisection of a cylindrical tube. This is bevelled off, like a chisel, to a cutting edge, which in this way becomes curved or crescent-shaped. If the corners also are ground off, as on turner's gouges, the cutting end partakes of a rounded, spear-like form, and presents a drawing edge to whatever may be brought in contact with it. Hence it might cut hair almost as easily as a razor. Its handle is usually nearly or quite cylindrical, and of firm, hard wood. Thus the tool might be just the club for heavy blows, if held by its metallic end, while its cutting edge would most certainly make wounds like those in question.

Such an instrument had not been thought of; but the suggestion evidently made an impression; for, on the next day, Dr. Cowles came to my house, bringing a turner's gouge, of inch wide blade, a new one procured from a shop as a specimen by a police officer who wished to know whether that was the kind of instrument I had spoken of—as it certainly was. The tool brought to me was nearly or quite two feet long—its inch-wide steel or cutting portion and its handle being of about equal lengths. Its handle was a heavy billet of hard wood, smooth, cylindrical, slightly ovoid at the end. Such a tool usually weighs 35 ounces, at least a pound more than a policeman's billy. Held by the metallic portion, a blow, given by it as with a club, would be quite capable of crushing in a skull and instantaneously stunning a victim to unconsciousness. Indeed, this would be almost inevitable; and without necessarily breaking the scalp.

Repeated blows would have the effect heretofore indicated. This done, the operator, without revoving his hand, but by simply turning the tool nearly or quite vertical, with edge downwards, could stab the fleshy parts as rapidly and as many times as he chose, before the victim could have time to revive or even move. He could do this after premeditated intention, or on the impulse of the moment, to thoroughly complete the deed. Such stabs would make clean-cut and curved or crescent-shaped wounds naturally turned in the direction of those found; and when the instrument was driven with force it would not be apt to slide or make grooves in the flesh, as a blunt tool would; and might pass directly through the already comminuted bone into the brain itself.

As the skull injuries showed that they could have been made by the handle of a gouge such as that brought to me, so the flesh wounds indicated the blade of a similar instrument. Indeed, Dr. Cowles had already tried the cutting end of the tool he had with him, and found that it would fit the wounds exactly.

Thus the problem seemed to be satisfactorily solved.

Dr. Cowles then went on to say, further, that among those interested in the woman was a young mechanic, who was, in fact, so tremulously anxious about her possible recovery as to excite suspicion and induce the surveillance of the police. Since my visit to the hospital this man had been taken into custody. Proving to be a turner by trade, his workshop and tool-chest had been searched. The chest contained the usual tools, having a series of gouges complete, with the exception of the inch-bladed one. That was missing! The arrested man could not explain its absence, or give any account of what had become of it. He could not even tell when he had used or seen it last; and it was too large a tool to be lost without notice. These were rather damaging circumstances, but he stoutly asserted his entire innocence of the whole affair; and no other evidence was ever found against him. He had, it appeared, known the woman for some length of time, and had always seemed anxious for her welfare.

The woman did not in any way connect him in the matter, nor even recognize him; in fact, she was never able to recall the assault or anything or person of the evening previous—an ante-accident oblivion not uncommon in those who have been severely stunned. The detained man made out an *alibi;* and was subsequently set free. He was generally accounted guiltless of the assault. I am not aware that the missing tool has ever been found, or its loss accounted for.

(As merest conjecture, in solution of this part of the mystery—possibly the man who with "horrid oaths" had threatened vengeance the evening before the assault, while in search of a club, may have robbed the chest of this tool—a very natural thing for a mechanic to do, and not unnatural in anyone on felonious intent. This may have suggested itself more readily to him if he knew the owner was an intimate friend of the threatened woman, as in such case the missing tool would tend to divert attention from himself and to turn it upon another man. Besides, the carrying a tool would not attract notice; whereas the possession of a club might arouse suspicion. The deed done, he could easily throw the tool into the waters of the dock near by, nevermore to be seen of men. There was, moreover, as rumor had it, an unaccounted-for disappearance from the neighborhood of a man quite competent to all this.)

The injured woman, after a protracted convalescence (during which the paralysis gradually disappeared) and a residence for a time at an asylum, at length regained her usual health and sanity. Before she was discharged, however, she declared her fixed determination to return to her old mode of life; and was soon lost sight of, except by the local police of her own immediate neighborhood.

In May, 1876, nearly two years afterwards, a condemned murderer, a few days before his execution, made a "confession" of many of his misdeeds, and claimed this assault as one of the number. He stated that by chance that evening he had met upon the street this woman, before unknown to him; that he went with her to a restaurant; thence to her house, and passed the night there; that, in the early morning, while she was yet sleeping, he pounded her on the head with a hammer, and then left her for dead. He further stated that the hammer might be found buried in the earth in a cellar he had access to at the time. He had other things there, for murderous purposes, awaiting opportunity. The finding of a hammer gave credence to the story, which was pretty generally acquiesced in. But having had much to do with the case for which this man was to suffer (his last victim having been my patient), I distrusted the narration. Yet what motive, it may be asked, as it has been, for a man so situated to make misstatements? Although now concerned with facts, not motives, here is one among others, quite conceivable. At about that time, in another case, a death-sentence was delayed and a commutation expected (afterwards actually granted) on the open avowal of murders and other revolting crimes—on the ground that "irresistible impulse," or something of the kind, had rendered the villain *not responsible.* More than one murder was chargeable to this last convict. A long list might save his *life*, if his philanthropic sympathizers (after having denounced his sentence as unmerited and too hasty) could be induced to urge upon the government the plea that "he couldn't help it." It would have been the venture of desperation; but it was too late. He soon became "much mixed," and finally broke down.

As to my patient, I had, as her murderer at last acknowledged, given in open court more correct details of the deed than he was able to recount when, in sight of the gallows, he attempted a narrative of his now admitted crime—admitted to his amazed legal defender, whom he had deceived, up to that moment, into full belief of his innocence.

In regard to the injured woman, his statements were so defective, or so at variance with my observations as a medical man, that, for myself, I soon became convinced that he never had anything whatever to do with her, unknown to him, as he admitted, up to the day of the assault.

But the hammer! It was (I have seen it) a smith's hand or riveting hammer, with a circular face of seven-eighths of an inch in diameter, not very sharply defined at the edge, but enlarging almost at once into a square form of an inch and three-eighths diagonal line; weighing only rather more than a pound, handle and all; not very likely on first blow to completely stun in an instant, and thoroughly paralyze one struck by it, or to cause, with its small face large fractures or depressions in the skull, or any fracture at all without leaving small, local, pulpy bruises in the scalp where struck, and not a uniformly smooth swelling as in this case. The *pein,* or wedge-shaped end of such a hammer, if the blow were of sufficient force, might cause a fracture, but then the wound left in the scalp would be a *straight,* mangled furrow or indentation. In like manner its round face would have a soft or pulpy and somewhat cup-shaped depression. If an open wound of the full size of its face could be so made, it would be circular, of course; but if less complete and of an inch in length (more than the diameter of this hammer's face), it could not be of a lesser arc than a semicircle. One, or two such wounds segregate, might be *imagined,* perhaps, but half a score or so would be clearly impossible. Now, the wounds we had to deal with were crescent-shaped, not semicircular; were sharply defined incisions, all of equal lengths, variously inclined and running into or crossing each other, and in themselves hardly conceivable as the work of a hammer, or as made by anything else than a sharp, cutting instrument. Besides, no hammer's blunt face could be forced into and through the skin, except at an angle, and then the opening would be bruised down on one side and crushed off on the other, according as the instrument slipped, as it inevitably would, more or less, on a rounded skull. Furthermore, we repeat, wounds made by a blunt tool might spatter their blood, but not set running so many freely flowing vessels. Bruised wounds do not bleed like incised ones. Again, and fatal, it would seem, in themselves, to the "confession"—

(*a*) No hammer, however keen its circular face-edge, or other blunt tool, could make such "sharp" *cuts* in and through the mass of hair this woman had—no, not one such; much less a score; (*b*) nor is it possible, supposing a human arm had the power, that a hammer-head, being only one inch and seven-eighths in length from its face to the hole for its handle, could be forced through such hair, scalp and skull, into the brain to a depth in all of "fully two inches," without making a much larger opening, carrying in to the very depths hair, flesh and fragments of bone, and leaving a very different state of things on the outside from that here found.

All that was done, however, could have been easily effected with a turners' gouge.

Not long ago, March 20th, 1889, fourteen years after the injured woman left the hospital, a notice appeared in the newspapers that her body had been received at the morgue. I immediately called on Dr. Harris, medical examiner, who at once, with most courteous readiness offered all facilities possible at so late a period. He had not known anything of her previous history; but had been told that after a prolonged drunken debauch, of which she had had many, nature giving way, she fell into a state of exhaustion, and in a few days thereafter had a painless and peaceful death. The cause of death had been officially reported "alcoholism."

Even in the grimness of her present surroundings, and after such a life, she was not ill-looking. Her face and features were not disfigured. She had "never had disease," except from alcohol, and was not wasted. Her head-of-hair was quite extraordinary in abundance, great length, softness and glossy blackness. It had been well cared for; even the officials of penal institutions had respected it; and, contrary to their custom, had left her in full possession.

There had been an autopsy, and everything had been replaced in proper order; not then to be further disturbed. I sought out, however, the external scars in the scalp—an important matter. They were not at first easy to find on account of the thickness of the hair. They were there, nevertheless; and, except near the ear, where was a wrinkled group, they were delicate, linear, crescent-shaped scars, unmistakably the result of clean cuts, or incisions by first intention—not of bruises. There could be no doubt in the matter.

Some weeks later I had a chance to see the "specimen"—deprived of most of its integuments. Looking at it in front, a general depression of the middle of the left side, as compared with the right, was quite evident; and this occupied about the space estimated in the first examinations at the hospital. Such a uniform and shallow depression suggested the result of blows by a weapon of considerable size, without angular projections—a smooth club, most probably.

On side view, about two inches above the anterior third of the zygomatic arch, there appeared evidences of former fractures. From a point on the frontal bone near the parietal several lines of old callus radiated at acute angles as from a centre. Between two of the uppermost of these was a double triangular prominence about an inch long and quite an inch and a half or more wide as it diminished off towards the base.

Very likely the fractures at this place came from the first blow the woman received from her assailant.

On, or just above, the level of the zygomatic arch, there was an oblong opening in the skull—beginning at the largest portion, just in front of the anterior part of the temporal ridge, and extending forwards about two inches. The upper and lower bony edges of this opening, irregular in outline, were not rough, having been smoothed off naturally in progress of time since the injury. The lower border seemed to be of two nearly equal lines, each very slightly curved and joined together at an angle, open upwards, of about a hundred and twenty degrees. The upper border of the opening was rather more irregular, but equally smooth. The anterior limits ended in a point, almost, while the posterior or aural portion was three-fourths of an inch, or more, perhaps, across. From this space, undoubtedly, came the fragments of bone removed at the first examinations. Here, too, near the ear, the finger could be passed into the brain, but no hammer of the size and form of that found could have ever made an entrance through such an opening. A gouge could have done this, and easily have shaped the lower border of this cavity.

On the occipital bone, about three inches behind the meatus auditorius, was a well-marked curvilinear depression of about an inch chord, which, with a slight ridge inside, gave strongest evidence of a former wound by an insrument that had gone completely through the skull at this point. This was where (in Dr. Cowles's trials, before mentioned) the gouge would most exactly fit the fleshy wound; and the prolonged depression of the enclosed fragment of skull showed with what difficulty the tool must have been wrenched from its impackment in the bone. Now, indeed, if any one can conceive of anything better adapted to produce such a wound than a gouge, he must have greater powers of imagination than I can lay claim to. Even with such an instrument the blow must have been given with very great force. Not to insist that, in the position the victim was lying, the blow of a hammer in the hand of an assailant, if it made a curved indentation, must have made one in a different direction—no hammer-head, even if held as a punch and struck by a sledge, could be driven through all the coverings of the skull and the skull itself at that place, and simply cut out, or force in, a circular, or, as in this case, an almost semicircular, fragment. A general crush of all the neighboring parts would be inevitable. A small hammer in the single hand of one person would seem wholly out of the question.

There did not appear to be anything else in the "specimen" attributable to the assault now under consideration."

To recapitulate—it appears from the length and width of the space involved in the fractures, and the depressions being in the outer table chiefly, that the victim had been struck by a club of some kind—one of considerable size, and smooth, also, inasmuch as the scalp was not laid open by it—

That, instantly stunned and paralyzed, her motionless insensibility permitted other blows, and the infliction of any number of open wounds;

That the wounds actually made, a score or so scattered or inseparable, were curved or crescent-shaped, with clean-cut edges, the little points, at the crossing of any two, whole and clearly defined, not bruised; that these wounds were of nearly equal size, each a full inch in length; and, further, that they were cut through thick hair "quite sharply," and through the scalp also, in one or two instances going quite through, and deeply into the brain; all evidently done by some kind of sharp-edged instrument—

That these wounds bled freely, as cut wounds generally do—

That a turners' gouge fulfils all the requirements of the case; while the hammer utterly fails in regard to the open wounds, and, as we think, in every particular.

Such are the premises; and such the offered solution. An adequate explanation, however, ought to be enough to hold against the improbable or defective.

To some persons the circumstances attending the "confession" may seem to add credibility to the murderer's story, but they should not. The confession of criminals, even when without motive and only tending to increase their infamy, are not received by courts of justice unless supported by other and more trustworthy evidence. Dying persons, in their feeble and imperfect utterances, seldom fully know what they are talking about, as momentary revivals prove. In the partial delirium of weakness, as in half-sleep, a person desiring to say one thing may utter something very different from what he wishes, semi-consciously, and in spite of himself. Last words, ordinarily of little moment, should be construed with caution, for too seldom can they bear the interpretations one would gladly give to them. Death-bringing illness, while killing the body, generally, even where and when least expected, clouds or nearly obscures the intellect, and fills the mind with baseless delusions, while the crushing terrors of impending destruction seem at times to start up in a culprit's mind remembrances of crimes which he never committed. What wonder, then, that, broken down by despair, the last straw of hope floating away, with mental powers utterly demoralized, a doomed man, with or without rational motive, magnifies his many misdeeds, assuming the acts of others which he had gloated on, and incorporating them with his own.

At all events, this portion of the murderer's "confession" I did not believe at the time. I do not believe it now. Facts in the case disprove it.

N. B.—After reading my paper, a friend called my attention to an article in the London *Lancet* (April 20, 1889, p. 819) wherein the writer asks, "Are most dying declarations unreliable evidence, and how may we differentiate them?" and then says, in answer, "If a human being be aboulic, . . . his [dying] statements are unreliable as evidence, . . . and the sooner medical jurists insist on the alteration of the position and value of such testimonies the better it will be for society and for mankind."—*Boston Medical and Surgical Journal.*

MRS. JANE C. STROMONT, widow of the late Dr. D. W. Stromont, of Topeka, Kansas, has generously given $10,000 to the Kansas Medical Society for the purchase of a library for the benefit of the profession.—*Medical Age.*

THERAPEUTICS OF INFANCY AND CHILDHOOD.

By A. Jacobi, M.D., etc., New York.

PERTUSSIS.

The mortality from pertussis in New York City is as great as that from typhoid fever. Twenty-five per cent. of all the cases under a year terminate fatally; five per cent. of all those between the first and fifth year, and one per cent. of all those occurring after the fifth. Its mortality, however, is not the only danger, for not infrequently chronic laryngitis, pneumonia, emphysema, and the result of hemorrhages taking place during the attacks, impair the health of the patient for many years or a lifetime. Thus the tendency of allowing whooping-cough to run its full course on the plea that it is a self-limited disease, or that every child must have its whooping-cough, is certainly not justified.

The prevention of whooping cough, which is a specific and contagious disease, is certainly not easy, for the reason that contagion may take place very suddenly, and through the first and second stages of the disease, both of which extend over a large number of weeks. Contagion may take place, no matter whether the cause is to be looked for in the presence of micro arganisms or not, by means of the exhaled air, or mucus, or the masses brought up by vomiting. Prevention means protection against the effects of all these factors.

As the disease is spread by contagion only, isolation is an absolute necessity, difficult though it be. In public institutions it is impossible. Thus no patient ought to be admitted to, or allowed to remain in, a public school. Whooping-cough children must not even be permitted to congregate in large numbers, because the case will become more severe by their mutually affecting each other. In one point only isolation is more affecting in whooping-cough than in other contagious diseases—namely, in this, that the disease does not appear to be carried by persons not thus affected.

The air must be kept pure, uniform and moderately warm. No wind or draft, whatever, must be permitted. Utensils must be kept clean and be disinfected, and the masses brought up by vomiting disinfected, destroyed or removed. The mucous membranes must be kept in, or restored to, a healthy condition, particularly those of the mouth and respiratory organs. Thus no injudicious exposure must be allowed. The digestive organs have to be watched, the stomach must not be full at any time, the bowels kept regular, the food be digestible.

As long as the cause of the disease is not understood, and therefore no casual indication can be fulfilled, the object of treatment limits itself to this: to relieve the severity and diminish the number of the attacks, to procure quiet nights, to stop the vomiting, to shorten the course of the disease and to prevent detrimental consequences.

An important indication is that of treating a catarrhal or inflamed mucous membrane. It is quite possible that a sore mucous membrane only is capable of admitting the contagion of whooping-cough as it does that of other infectious diseases, for instance, diphtheria. Besides, by attending to the mucous membranes in time, the occurrence of serious complications, such as pneumonia, may be prevented. Catarrh of the mouth and pharynx ought to be treated with doses of chlorate of potassium of from half a grain to a grain in a teaspoonful of water every hour; and a large number of our expectorants find their ready indications in such cases. All of those which have a depressing effect must be avoided, particularly antimonials. Even ipecac must be given in small doses only. Alkaline waters have a beneficial effect. The muriate of ammonia, in doses of from half a grain to two grains every hour or two hours will liquefy the viscid secretion of the bronchial mucous membrane. In a state of evaporation, as described in a former essay, it may be inhaled. The inhalation of other agents, which have been recommended as expectorants, will at the same time act as germicides, so the vapors of benzol, of carbolic acid and cresolin; and the reputation obtained by gas-works in the treatment of whooping-cough is thus finding its ready explanation.

The effect attributed to astringents in the treatment of whooping-cough is best explained by their action on the mucous membranes. Particularly alum and tannin have been so employed. Emetics have been recommended for the purpose of relieving the surfaces of sticky mucus difficult to remove. Sulphate of copper or zinc, ipecac powdered, or turpeth mineral are the proper substances to be selected for that purpose.

Schliep has seen good effects of the use of the pneumatic chamber in whooping-cough. He kept the children with their mothers or attendants in compressed air. In a few cases a few sessions of two hours each were sufficient to relieve the patients considerably. In a number of cases from twelve to twenty sessions were required. In all of them he claims decided effects, not only in the reduction of the number and severity of the attacks, but also in the duration of the disease. The explanation of the good effect is looked for as well in the increased amount of oxygen exhaled as in the diminution of the hyperæmia of the mucous membrane. I believe the plan is a good one, particularly if it could be combined with the inhalation of turpentine.

Cases exhibiting a severe degree of pharyngitis and laryngeal hyperæmia, particularly in children who have suffered a long time from chronic inflammatory affections of the parts, will do well, as far as the local symptoms are concerned, under the use of the tincture of pimpinella saxifraga; a drachm distributed over the twenty-four hours will be the proper dose for a child of from two to three years.

Local treatment has been resorted to by many. The pharynx has been treated locally with a solution of quinia (Hagenbach), a two per cent. solution of resorcin (Moncorvo), a one or two per cent. solution of nitrate of silver, a five per cent. solution of hydrochlorate of cocaine, of four or six per cent. solution of bromide of potassium. Applications have also been made directly to the larynx of quinia mixed with bicarbonate of sodium in different proportions, of mild solutions of salicylic acid and of powdered sulphur. Inhalations have been resorted to, besides those enumerated above, of sulphurous acid, and extolled as highly as any of those which have been mentioned. If they prove anything, and they and the great number of the recommended for the same purpose speak for the difficulty encountered in the treatment of whooping-cough, and for the confidence of the practitioner in the patience and submission of his wards. Michael treats whooping-cough as a neurosis, with the same means he employs against other neuroses attributable or attributed to nasal irritation. He claims that seventy-five per cent. of his cases of whooping-cough have done well when exposed to the influence of quinia, bromide of potassium, benzol, tannin, boracic acid, salicylic acid, iodoform, cocaine, bicarbonate of sodium, or prepared chalk applied to the mucous membrane of the nares.

The internal administration of chloral hydrate, or croton chloral hydrate, has been recommended by Leroy in 1879. The daily doses range from eight to fifteen grains. In all cases the attacks became less severe within a short time, but the disease itself was not shortened. Kennedy expresses himself very enthusiastically about the effect of the remedy, which is given by itself or combined with the bromide of potassium. To procure an occasional good night, a single dose of from six to twelve grains has rendered me good service.

The inhalation of chloroform, or, according to some, of ether, can be recommended in those cases in which convulsions have either occurred during severe attacks, or in which the interruption of the circulation is such that cerebral hemorrhage or convulsions must be feared. In the case of a very young infant I have administered chloroform once every hour for every new attack during the course of a number of days in succession for that very purpose, with beneficial result.

Quinia has been used both internally and externally by a number of authors of good repute. It was first recommended by Letzerich, who claimed to have found the cause of whooping-cough to consist in the presence of a coccus which he intended to destroy by the action of quinia. That coccus has not been found to this very day, but still quinia has found favor for a number of reasons. Rossbach credits the drug with the power of relieving increased reflex irritability. Binz, however, attributes to it an antizymotic action. He gives as many decigrammes daily as the child has years, so a child of five years would take eight grains of quinia a day. He expects to find an improvement after two or three days, inasmuch as the attacks are said to become by that time shorter and less severe. Where it cannot be given internally, he administers it in suppositories or in injections. Where the sulphate or hydrochlorate are not tolerated, the neutral tannate of quinia is selected instead, with this proviso, however, that the latter salt is much weaker than the former, and has to be administered in doses from two to three times as large. It has the advantage of being tasteless. In our own country it is particularly Forchheimer, who reported ninety-seven cases as having been benefited by the administration of quinia.

Antipyrin has been recommended for whooping-cough, since 1886, by Demuth, Sonnenberger, Moncorvo, Guaita Wendt, and many others, as almost a specific. Like all the other chemical relatives of chinolin, it destroys parasites outside the organism. It has been claimed, or presumed, that it displays the same effect in it. Whether that is true remains to be seen. At all events, however, it is a powful nervine. It is claimed that it can be given with the same beneficial result in the beginning of the disease and in its most severe stage, and that the latter will terminate favorably in from four to five weeks after the beginning of the treatment. The dose is from a grain and a half to two grains three or four times a day for every year of the patient, with an occasional large dose for the night.

Of all the medicines advised against whooping-cough I prize belladonna most highly. I have always returned to it after having discontinued it for the purpose of trying one after the other of the many remedies recommended during these thirty years. As early as 1861 I had occasion to express, in the *American Medical Monthly* the following opinion :

"Belladonna is the most powerful remedy in whooping-cough. I scarcely remember a single case in which its administration, for years past, proved unsuccessful in shortening the duration of the process. The result obtained by me has generally been this: that a well-developed case of whooping cough, after the diagnosis was made certain beyond a doubt, would last for only three or five weeks longer, instead of running through its full course of months and quarters of a year. The effect is generally not a sudden one. Many cases in which belladonna is given from the first commencement will become worse for a short while, then remain at their height for some days or a week, and gradually improve in both the character and frequency of the attacks. In others the effect is perceptible from the days after their first administration; the cases soon assuming a more favorable aspect. Such has been my uniform experience during the last five years, in each of which the children of this city have been suffering from a more or less severe epidemic.

"My readers, many of whom, doubtless, have been in the habit of prescribing belladonna in whooping-cough with more or less marked success, need hardly be assured that I claim no priority. Belladonna has been recommended in this disease for many decennia, and has just as long been objected to, as either useless or dangerous. I have touched upon the subject because of my conviction that both the former objection and the latter fear are groundless.

"Belladonna is well-known readily to produce symptoms of poisoning. An amount of two and a half or three grains taken by an adult in the course of a day, of either root or extract, has the effect of dilating the pupils, causing a feeling of dryness in the throat, scintillation and giddiness, and even erythema of the skin. This latter effect is, however, not frequently seen in adults, while the effects on the pupil and brain are very common. It was therefore believed that, as nervous disorders are as common as they are dangerous in infantile age, these effects ought to counter indicate its use; it was stated that it would cause congestion, sopor, acute hydrocephalus and idiocy; and the practical consequence simply was that the dose of the remedy, when given at all in a case where it appeared to be indicated, was entirely too small. Thus, doses of a sixtieth, a forty eighth, a thirtieth of a grain of extract of belladonna, repeated three or four times a day, were deemed sufficient and proper. These doses could not but prove unsatisfactory, and thus it happened that the remedy was misappreciated and given up. The doses, however, administered by me proved successful, because they were really sufficient.

"Infants of six or eight months of age affected with whooping-cough require a sixth of a grain of either the root or the alcoholic extract three times a day; children of three or four years tolerate three doses, each of half a grain. These doses appear to be very large in proportion to those tolerated by adults, but it is a fact which can easily be verified that the effect of belladonna on the pupil and brain will hardly ever be perceptible in children from these or smaller doses. The succession of belladonna symptoms in children differs, moreover, altogether from that in adults; the erythematous and flushed appearance of the face and neck, sometimes even of the whole surface, is the first symptom in infantile age; whereas it is seldom observed in adults, or in cases of thorough poisoning only. Some of the old authors have advised the administration of belladonna to such an extent as to produce the first symptoms of poisoning; others, however, have insisted on this practice being dangerous and wholly objectionable. I, for my part, soon found that those children suffering from whooping-cough who exhibited general erythema from an apparent overdose recovered soon, while others, in whom no such symptom was observed, remained sick for a long time; and continued experience has proved that the occurrence of this symptom is absolutely necessary for the full remedial effect. To obtain a cure in whooping cough the remedy must be given in a dose sufficient to produce erythema, or at least a flushed condition of the face, and, as it were, feverish appearance after every dose of belladonna. Thus the dose is to be gradually increased until this result in obtained. It is a remarkable fact that very young infants may take proportionately large doses: at all events, I do not remember a single case in which less than half a grain was taken in the course of a day. The prescriptions I have been in the habit of ordering are very simple ones. I either give the medicament as a powder, or have the extract dissolved and sweetened according to circumstances.

"The administration of belladonna alone is indicated in such cases of whooping-cough as are not complicated with inflammatory affections of the respiratory organs. The latter take the lead in complicated cases as well in treatment as in the nature and gravity of the symptoms. This is so certain that, whenever a pneumonia coincides with or follows whooping-cough, the peculiar sound of the cough of the latter will disappear, nor return before the inflammatory affection is removed. As this is, moreover, the most dangerous of the two, it requires attention before the other. As to bronchial and laryngeal catarrh, the former especially is a very common symptom in whooping-cough. Where it is but slight it may be considered as unimportant; where, however, it gives rise to fever or dyspnœa, it constitutes a further indication to interfere."

The preparations mentioned above need not be the only ones to be relied on. The tincture of belladonna is a convenient remedy, inasmuch as the dose can be readily and gradually increased. A baby of two years may take three daily doses, the first of which may be six drops. If the flush be perceptible within twenty or thirty minutes, that is the dose; if not, the number of doses must be increased to obtain the effect which must be obtained after every dose. After a few days larger doses are required; there is no case but demands at least twice the amount of the original dose of belladonna within ten or twelve days, or before the disease disappears. Atropiæ sulphas may take the place of belladonna. A child of two years will probably begin with the five-hundredth part of a grain, to be given three times daily, and increased according to the rules stated before.

Since that early time alluded to, Vogel speaks highly of the effect of belladonna, taking the dilatation of the pupils as a guide. As I have mentioned, this effect is rather late in appearing in children, and is not required; indeed, it may become quite uncomfortable. Meigs and Pepper combine belladonna and alum. Evans, in the *Glasgow Medical Journal* of 1880, recommends the administration of a large dose first, to be followed by smaller ones afterwards, and there are not a few authors who have seen immediate good effect following the intended or accidental administration of a large, almost poisonous dose. Indeed, the number of practitioners now relying on the effect of belladonna in whooping-cough is quite large, no matter whether they look for the beneficial action on the laryngeal and other branches of the pneumogastric nerve or on the medulla oblongata, or rely on its influence in modifying reflex action.

Opium is spoken of favorably by a great many. I cannot recommend it for anything like regular administration, but it certainly has a good effect in procuring good nights when given in a single dose. A grain of Dover's powder given to a child of two years, at bedtime, will at all events have the effect of procuring sleep. In a number of cases the combination of opium and belladonna acts quite well. The antagonistic effect claimed for these two drugs is not such as to interfere with the combination of their effects as sedatives.—*One of a series of articles on Therapeutics of Infancy and Childhood in Archives of Pediatrics.*

ABSENCE OF RIGHT PARIETAL BONE.—In a fine, healthy boy, born at full term, the right parietal bone was absent. Over its site the skin was loose and distended with fluid; palpation produced fluctuation. The edge of the surrounding bone could be distinctly defined. One month later the child was again seen. The site was now occupied by bone, except a piece as large as a shilling in the upper part. The bone was firm but somewhat nodular, especially over the site of the space that was last to disappear.—*Archives of Pediatrics.*

APHORISMS IN THE TREATMENT OF URETHRAL STRICTURE.

By A. W. Stein, M.D.

1. Gradual dilatation is unquestionably the safest method of treating urethal stricture. Aside from hemorrhages, abscesses, urinary infiltration, curvature of penis during erection, sloughing of tissue, etc., are the not unusual concomitants of internal urethrotomy. Rigors and urethral fever are also exceptional phenomena in gradual dilatation. Most strictures yield to this method promptly and satisfactorily.

2. The objection usually made to gradual dilatation is that often the patient comes from a distance and seeks speedy relief. To this comes the obvious reply, that we cannot assume risks to the life of our patient in order to save time. But if time is an item, we know what continuous dilatation can do if he will confine himself to the house for a few days.

3. A urethra that is accustomed to instrumental manipulation will tolerate incision better than one that is not so accustomed. Should internal urethrotomy be decided upon, our patient is all the better prepared for having submitted to the obtunding effect which the passage of the instruments occasion.

4. In the pendulous portion of the urethra are strictures often so yielding and resilient that dilating instruments have little or no effect upon them, and it may be said that the nearer such coarctations are to the meatus, the more they partake of this character. Such strictures are only amenable to dilating urethrotomy. But I must say that, while it is exceptional to have rigors with an elevation of temperature follow incisions near the meatus, I now recall at least three instances in which a moderate incision of the meatus, without the subsequent introduction of instruments in the urethra, occasioned very distinct rigors and fever. In one patient, especially, I had not passed an instrument for eight days previous to the meatotomy, and he had, notwithstanding, a sharp attack of urethral fever immediately after the incision, which gave me considerable anxiety at the time.

5. All things being equal, the danger of internal urethrotomy increases with the depth of the stricture, that is, the distance the

coarctation is from the meatus. The bulbous portion of the urethra is, from its anatomical nature, the most dilatable, and experience teaches that the nearer the stricture is to the bulb (not traumatic) the more it is amenable to dilatation. At least not until this has been fairly tried and has failed, should incision of this portion of the canal be thought of, and then :

6. External division is to be preferred to the internal in all strictures requiring incision that are accessible from the perineum (notably if of traumatic origin). In certain quarters across the water our surgical brethren regard the immunity from symptoms, when internal urethrotomy is combined with an external perineal incision as a revelation; but I think I can speak for you, as I certainly know I can for myself, that we have long since learned that anterior strictures, divided internally, are rarely attended with unfavorable symptoms (notably urethral fever) when the urine is diverted from them by a perineal opening.

7. Slight encroachments upon the urethral calibre, when submitted to internal urethrotomy, are not, as a rule, attended with the same inconveniences that follow the operation upon narrow strictures. But strictures of large calibre rarely require cutting, unless, indeed, a superficial contracting band occasions sufficient reflex disturbances to require prompt relief.

8. What has been said of internal urethrotomy applies with redoubled force to divulsion, with this addition : First, that it is unnecessary in the bulbous portion, and second, that wherever employed it is dangerous, rude, inexact and a purely mechanical means that does not exact, and is exempt from, surgical skill. It must be relegated to the dark ages in urethral surgery.

9. The term urethral fever has been objected to and urinary fever substituted, on the assumption that the absorption of urinary constituents is the chief factor in the genesis of the complaint; but I do not think the choice of the substitute a happy one. The first term, at least, expresses the peculiar and characteristic predisposition on the part of the urethra to resent surgical interference, as no other part of the body does. I believe that urethral fever can, in the majority of instances, be proved to be a vaso-motor disturbance of reflex origin, which we may infer from the fact that severe constitutional symptomes sometimes obtain in cases where the stricture is simply overstretched, and where there is no hemorrhage or other

evidence or injury or solution of continuity of any portion of the urethra, whereby the ingress of urinary constituents can result. While the contact of urine with a recently made wound in the urethra is undoubtedly in some way a potent factor in creating constitutional disturbance, it seems improbable that absorption of urine can obtain in sufficient quantity from an epithelial abrasion, produced by the passage of a sound, that is capable of producing in rapid sequence rigors, fever, suppression of urine, uræmic coma and death. If, in response to a laudable curiosity to ascertain the sensations which the introduction of an instrument occasions in others, we pass for ourselves, the first time, presumably, into a healthy urethra, with the utmost delicacy, a blunt-pointed, moderate-sized bougie, we become conscious of a disagreeable feeling, akin to pain, the moment the instrument enters the fossa navicularis, which becomes more and more intense as we approach the deeper parts of the canal and touch the vesical neck. It may be said that this is caused by a denudation of the epithelium from the mucous surface in opening the lumen of the urethra; and that some injury has been inflicted is shown by the fact that the contact of the urine succeeding the passage of the instrument occasions similar pain. But it must be borne in mind that the irritation is only felt during the contact of the urine, and it subsides too soon (generally after the second act of micturition) to suppose it possible that a reproduction of the epithelium has taken place. Above all, I may well question the ground upon which toxic infection, as a factor in urethral fever, is based, since I find that irritable strictures are often cut with advantage, and without producing any disturbance, although the passage of the sound in dilatation almost invariably occasioned it.

10. As to ultimate results, thorough dilatation compares most favorably with urethrotomy. An absolutely radical disappearance of a narrow stricture, if it be possible, is of the rarest occurrence. In strictures of large calibre the results are more favorable, whether treated by internal urethrotomy or by dilatation. But there is evidence at hand that the means adopted for the detection of strictures of large calibre are often deceptive in the extreme, and that urethral obstructions are met with where in reality there is absolutely no pathological change in the canal. That such obstructions are always curable we give ready assent to. Then, again, there may be inflammatory thickening or granulations of the mucous membrane sufficient to impart a distinct sense of unevenness or inequality at some point to the manipu-

lator, but in these cases there is often no organization into a stronger stricture. This obtains in many cases of chronic urethral discharge. I am confident to have seen, and so have you, no doubt, thickening of the urethra disappear permanently with the discharge by the repeated introduction of steel sounds of increasing calibre. I have now a number of such cases prominently in mind that were so treated years ago with permanent benefit. That some of the radical cures of strictures of large calibre by internal urethrotomy were of the nature of temporary indurations of the mucous membrane, and not true strictures by organization, becomes thus highly probable. Finally, that some strictures show but little disposition to contract, is a logical deduction in favor of internal urethrotomy.—*Medical Record—American Lancet.*

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PROF. OSCAR J. COSKERY, M.D., Professor of Surgery in the College of Pphysicians and Surgery, died July 6th, after a lingering illness. We remember the pleasant visits of Dr. Coskery to the Fayetteville and Elizabeth City meetings of the Medical Society. At our last meeting his health was very bad, and the announcement of his death will not be a surprise.

DR. DANIEL W. HAND, of St, Paul, Minn,, died on June 1st, of uræmia, in his 55th year. He was born at Cape May Court House, N. J., August 18, 1834. He was educated in arts at Lewisburg, and in medicine at the University of Pennsylvania. From 1857 to the breaking out of the war Dr. Hand resided at St. Paul. His services as regimental surgeon, brigade surgeon and medical director were meritorious and efficient. He was wounded at Fair Oaks. He was a prisoner at Libby prison for a short time. In August, 1864, he was at Newbern, being medical director of the State of North Carolina when yellow fever visited that city, carrying off over twelve hundred of the citizens and eleven of his assistant surgeons. He was attacked by the fever, but recovered quite promptly, although with a renal disease established, which eventually ended his life. In 1865 he returned to St. Paul, and before many years stood in the front rank of the profession of his State. He was for many years the President of the State Board of Health.—*New York Medical Journal.*

EDITORIAL.

THE NORTH CAROLINA MEDICAL JOURNAL.

A MONTHLY JOURNAL OF MEDICINE AND SURGERY, PUBLISHED IN WILMINGTON, N. C.

Thomas F. Wood, M. D., Wilmington, N. C.,
Geo. Gillett Thomas, M. D., "
Editors.

☞ *Original communications are solicited from all parts of the country, and especially from the medical profession of* The Carolinas. *Articles requiring illustrations can be promptly supplied by previous arrangement with the Editors. Any subscriber can have a specimen number sent free of cost to a friend whose attention he desires to call to the* Journal, *by sending the address to this office. Prompt remittances from subscribers are absolutely necessary to enable us to maintain our work with vigor and acceptability. All remittances must be made payable to* Thomas F. Wood, M. D., *P. O. Drawer* 791, *Wilmington, N. C.*

ALL NORTH CAROLINA PHYSICIANS MUST REGISTER IN THE OFFICE OF THE CLERK OF THE SUPERIOR COURT BEFORE JANUARY 1st, 1890.

We hereby remind our readers that all persons entitled to practice medicine in this State must register in the office of the Clerk of the Superior Court of his county, according to the law, a copy of which has been mailed to every doctor whose address could be found. Read the law carefully and go at once to perform this duty, as neglect to do so, even in the case of one entitled to practice, will put him in the unpleasant position of being an illegal practitioner, and necessitate his going before the Board of Examiners for a license to practice.

We do not think it necessary to define who may register legally, when the printed law sets it forth so distinctly, but we urge on all to register at once.

The first license issued under the new law was issued by S. VanAmringe, C. S. C., to the senior editor of the JOURNAL, bearing date 3d of May, 1889. Several Wilmington physicians are of nearly the same date.

GUILTY OF MISDEMEANOR AND LIABLE TO FINE AND IMPRISONMENT FOR PRACTISING WITHOUT A LICENSE.

The law regulating the practice of medicine, as now amended, may have points in it about which the Supreme Court may have to give its opinion, but the plainest matter which anyone can understand without the aid of the Supreme Court is, that those applicants who failed to secure the license of the Board of Examiners, at their last session, and those persons whose licenses have been revoked, or who, having temporary license, failed at the next regular meeting of the Board to secure a full license, are guilty of a misdemeanor. In every community where such persons are practising illegally the grand jury of the county ought to be notified, in order that the person calling himself doctor without the authority of the law, should be dealt with promptly.

We hold that there is now no excuse for illegal practice. The State has shown every consideration for the unprepared, practically declaring an amnesty, in one sense, to many men who should not be admitted to practice, but for fear of colliding with the presumed principle that the State has no right to pass a retroactive law, the State has now exhausted all of its expedients, its tender solicitude for the unfortunate doctors who are the qualified (ignoring in the meantime the dangers and risks to the lives of the more unfortunate patients of these same doctors), and now stands with the profession in the attitude of waging a war against those men who still persist in violating the plainest terms of the law.

EHRLICH'S TEST FOR TYPHOID FEVER.

In the June JOURNAL we published an article from the *Therapeutic Gazette* giving special directions as to the preparations of the necessary reagents for the detection of typhoid fever. It will be remembered that a saturated solution of sulphanilic acid in a dilute hydrochloric acid (1:20), and another solution of sodic nitrite in distilled water were the reagents. As these chemicals may not be easily obtainable, we have a limited supply from which store we offer to a few friends enough to make some tests, asking only that they give us in return the results of their investigations with it. The reagent is in the stage of probation, but so much is expected from it, we desire to know at an early day what are its true merits.

We have already made some experiments with it and record some preliminary points: 1st. If the urine examined has a considerable amount of urates the reaction will be a red, but it is the red of a solution of bichromate of potash, not characteristic. 2d. In two cases of undoubted typhoid in which the test was not employed until the third week, the reaction was not characteristic, giving the bichromate red only, and not running through several shades to port wine red, but remaining of a permanent hue for several days. 3d. In a case of fever, suspicions only, and in the person of one who the present writer treated nineteen years ago for an undoubted case of enteric fever, the reaction was of a decided cherry tint, different entirely from the bichromate color, which we take to be the characteristic reaction. The tested solution retains its cherry redness for several hours.

It must be observed, then, that the urine must be taken not earlier than the fourth day, and not later than the second week of fever, if we are to expect the characteristic reaction.

If this reagent proves to be what it now promises, it will be of great practical use in diagnosis and prognosis, and doubtless some chemists will be able to furnish in a portable form the two essential ingredients. Sulphanilic acid can be kept easily in solution, but the sodic nitrite is unstable and needs to be made in fresh solution every two or three days. The latter salt comes in sticks of a drachm or two in weight, and will keep easily in a well-stoppered bottle. Such minute quantity of this is needed for the experiment, that it could easily be carried about in a pocket test case, to be used at the bed-side.

REVIEWS AND BOOK NOTICES.

ATLAS OF VENEREAL AND SKIN DISEASES; with original text. By Prince A. Morrow, A.M., M.D. New York: William Wood & Co., 1889.

This elegant work still maintains its high merit. We have before us the 14th and 15th Fasciculi, containing each five plates with many figures of Lupus, Sarcoma, Epithelioma, Leprosy, Scabies, Chromophytosis, Trichophytosis, Eczema Marginatum, etc., etc., through a rich collection of the best portraits from American and German portfolios.

These fasciculi complete the work, and when bound it will make the most superb addition to dermatology in this country. It is a subscription publication, and ought to be secured while the plates are new and fresh. The subscription price is $2.00 a part.

THE PHYSICIANS' LEISURE LIBRARY—I. THE RADICAL CURE OF HERNIA. By Henry O. Marcy, M.D.

The title page further describes the contents of the volume by explaining that it is intended to describe the radical cure of hernia by use of the buried antiseptic animal suture.

Independent of the description of the operation the history of the introduction of animal ligatures from the first hint at it by Thomas Young, of Edinburgh, 1813, Dr. Physick's use of chamois ligatures, Ephraim EcDowell's use of Indian tanned deer-skin in ligaturing the pedicle which he returned into the cavity in his ovariotomies, are all hints which ought to take the conceit out of the more modern discoverers and cause them to look well to their laurels.

The last chapter describes the method of operations, and is illustrated with five apparently original cuts. It is needless to add that the operation has its foundation in the principles of aseptic surgery, and is probably the future operation for hernia.

II. PULMONARY TUBERCULOSIS: ITS ETIOLOGY, SYMPTOMATOLOGY AND THERAPEUTICS. By Prof. Dr. H. Von Ziemssen. Translated by David J. Doherty, A.M., M.D.

This short essay of a hundred and nineteen pages is of absorbing interest. It is the latest utterance of a distinguished teacher on the vast subject of the bacillary origin of phthisis, among many other practical things connected with the prophylaxis and treatment of this disease. That hope for the consumptive is now dawning, there can be no doubt, and such encouragement as we here get is welcome, to doctor and patient. Doubtless much of the matter we get is but flimsy theory and very wide apart from actual curative therapeutics, but the kernel of truth is there and will be harvested some day.

The description of "How to look for tubercle bacilli in sputum" is very short and simple, but there are many better ready-made stains, made to save the country doctor trouble, and these he will always use.

DIPHTHERIA: ITS NATURE AND TREATMENT. By C. E. Billington, M.D., and INTUBATION IN CROUP, by Joseph O'Dwyer, M.D. New York: William Wood & Co., 56 & 58 La Fayette Place, 1889.

This is a beautifully printed volume upon a subject that continues to be important to the medical profession, being in truth *the* scourge of the civilized world next to pulmonary phthisis. Dr. Billington has given us the history of the disease in a very concise and interesting manner, leaving little to be desired.

The author (Dr. B.) thinks in reference to the identity of diphtheria and membranous croup, that as far as our present knowledge serves us to form a conclusion, they are two distinct affections. Dr. O'Dwyer writes in reference to the same question some words of warning as to the practical results of accepting the duality theory of the two diseases. "The much vexed question" of the identity or non-identity of croup and diphtheria would not be a subject of much practical importance were it not for the fact that many lives are sacrificed every year on account of the duality theory. When a case is diagnosticated as membranous croup, no precautions are taken to protect other members of the family, because it is not a contagious disease. I can safely say that at least one-fourth of all the cases that I have been called upon to intubate were regarded as simple fibrinous laryngitis by the attending physicians. In many instances other children in these families subsequently developed diphtheria with fatal results in not a few."

A lithographic plate is inserted to show the difference between follicular tonsolitis and diphtheria of the tonsils and velum, and a rhinoscopic view of the posterior nares in a fatal case of naso-pharyngeal diphtheria.

Dr. O'Dwyer's intubation instruments are described and figured, by him, up to a recent date. The whole volume is welcomed as a mile-stone on the way, to enable us to determine where we stand, both as to the nature of diphtheria and our armamentarium in combatting it.

A GUIDE TO THERAPEUTICS AND MATERIA MEDICA. By Robert Farquharson, M.P., M.D. Enlarged by Frank Woodbury, A.M., M.D. Lea Brothers & Co., 1889.

This is a small 8vo. volume of a little less than 600 pages, which has met with general favor through its successive editions, and this, the fourth edition, is well up to latest and best additions to current materia medica. More and more perplexity exists with authors in the selection of articles, to include only those that have fairly passed the probationary stage. In this latter difficult matter our author is remarkably successful.

He continues his original plan of giving in parallel columns the physiological and therapeutical action of remedies, concluding the article on "Dose and Mode of Administration" with well constructed prescriptions—an important desideratum for beginners.

The American editor has added in the appendix a chapter on the treatment of poisoning, and an epitome of the National Formulary. For the help of students a list of questions is added for the convenience of students for self-examination.

The paragraph (p. 308) which mentions "dialyzed iron" as having "recently come into fashion" is unfortunately very much out of date. Dialyzed iron has long since gone out of fashion, and we have thereby lost a most excellent preparation, for all that could be said against it was that very few chemists could make it properly. We hope to see it revived.

"Farquharson's Guide" is becoming wider known, and doubtless will be made more acceptable with each revision, as it has in this. It is just the book the young doctor will consult with profit in very many of his daily emergencies, and to all such—yes, and to many of the "grave and reverend seniors" we commend it most heartily.

CURRENT LITERATURE.

VALUE OF SALICYLIC ACID IN DERMATOLOGY.

At a meeting of the American Dermatological Association, at Washington, September 18, 1888, Dr. C. Heitzman, of New York, read a paper on the value of salicylic acid in dermatology, in which he said that he had been using the remedy for the last three years. It has two well-marked properties. The first is the peculiarity of acting on the horny layers of the epidermis. There is no agent so active in softening, and at last destroying, the epidermal formations as salicylic acid. Its other action is as a parasiticide. These two properties open a large field for research. We should be careful not to include cases in which we have merely impressions as to its value; but there are many cases in which there can be no question as to its utility, and in some of these it has never been used before. The remedy may be used as a powder, as a plaster, or in the alcoholic solution. It has the advantages that it does not discolor the skin or linen, and has no odor. It is used in twenty-four kinds of cases. In hyperidrosis its action is well-known. The German soldiers use it in a one per cent. salve, made with tallow, applied to the feet when upon the march. In seborrhea, especially when combined with acne, it has given brilliant resulrs. One per cent. of the acid with six to eight per cent. of sulphur, is an excellent application for dandruff. A prescription with tar Dr. Heitzman likes better, but it is less agreeable to the patients. In urticaria it is an excellent means of allaying the itching. In furunculosis an ointment of six to ten per cent. has prevented an outbreak and checked the disease. But, to be sure of results, the quality of the acid must be guaranteed. In two cases in which the prescription had been filled at random there had been no good results, but when Scheering's salicylic acid was substituted the effect was immediate.

In one case of dermatitis herpetiformis a lotion of the acid proved the best thing the patient had tried, although it was not capable of smothering the disease or preventing recurrences. In psoriasis, after chrysarobin and tar, it is the very thing to be applied, though the peeling off of the scales is not so rapid as with other remedies. In lichen planus salicylic acid is far superior to carbolic acid or corrosive sublimate. It can also be applied over a larger area with safety. It allays the itching, removes the scales and flattens down the papules. The author has prescribed three per cent. solutions, which are to be diluted at the beginning of treatment. Six cases were treated, and all did uniformly well without the administration of arsenic.

In all varieties of eczema the results were satisfactory. Ninety-six cases were treated, generally with one per cent. of the acid, with equal parts or zinc-powder and starch, in two parts of ointment. In eczema madidans one half per cent. is better. Sometimes it may be used as strong as ten per cent., where there is great thickening in the very chronic cases. As the acid does not attack the connective tissue, there can be no caustive effect. In acne a three per cent. solution removes pigment patches, assists in removing comedones, and renders the skin soft. In acne rosacea the results were good, but in sycosis less good. The remedy does not seem to penetrate deep enough between the furrows. In impetigo contagiosa it cures the disease in ten or twelve days. If combined with the liquor gutta-perchæ and some oil to make an emulsion, it adheres to the skin. In keratitis, senilis, callosity, clavus, verruca, its action in removing the thickened portion, is well-known. In ichthyosis it is easy to remove the scales, but they return. In lupus erythematosus and lupus vulgaris the results were brilliant at first, the excrescences flattened down rapidly at first, but not a case was cured. For pruritus, in the shape of a lotion, it is excellent. In tinea the solution with gutta-percha is better than Taylor's remedy. But generally the disease will not be cured by any one remedy, and we are only too glad to have more than one. In tinea versicolor a one per cent. solution is effective.

Dr. Pye Smith, of London, spoke of his use of the remedy in hypertrophic inflammations in the soles of the feet and the palms of the hands where there were fissures; here the effects of the remedy were wonderful. He corroborated what Dr. Heitzman said in reference to the use of the remedy in furunculosis, especially as it occurs in youths or school-boys, sometimes for months together. He believes that the contagion is carried from one point to another in the dressing. In the treatment of the individual pustules he always hardens the surrounding skin by bathing it in lead lotion, thus giving less opportunity for the invasion of the micro-organisms than does the old method of poulticing, which makes the skin sodden and readily permeable. In lichen planus he has tried the salicylic acid with some success, but has found it difficult to follow the cases closely enough to be sure of his ground. He prefers to wait until more material has been collected. In general, he said he felt that there were not enough cases to warrant definite conclusions.

Dr. L. D. Bulkley, of New York, said he had used the remedy largely in many of the cases referred to, and mentioned particularly hyperidrosis of the axilla in women. He uses with great confidence a ten per cent. powder, with one drachm of oxide of zinc, and the rest starch. In eczema care must be used. He has seen acute attacks started up by it. He also mentioned favus of the scalp, in which he considers salicylic acid very valuable in the form of a strong lotion. He has had several cases under observation for several months, and the disease has not yet returned. It is good in seborrhœa, but if it is too strong, even when mixed with oil, the patients come back and say it is too drying.

Dr. A. Van Harlingen, of Philadelphia, uses it in the treatment of chronic eczema of the legs in a paste with glycerine and zinc oxide, made into paste with five per cent. of the acid. If it is carefully applied, the patients go for from three days to a week without redressing.

Dr. E. B. Bronson, of New York, thinks that in most cases we use the remedy as a preliminary measure, as it prepares the surface for other remedies. This is true especially where there is an enormous accumulation of the epidermis, as in cases of seborrhœa. In these cases he has generally been obliged to resort afterward to some other remedies.

Dr. Heitzman, in closing the discussion, says that the field of the remedy in hyperidrosis extends to any portion of the body which is affected, especially the folds of the groin and the genital regions.—*New York Medical Journal.*

THE death is reported of Prof. Robert Ultzmann, MD., of Vienna, at the early age of 47 years. His book on urinary analysis has been translated into English.—*Boston Medical and Surgical Journal.*

THE PREVENTION OF TUBERCULOSIS.

Although much has been written on this gravely important subject, the views of many physicians as to the contagiousness of tuberculosis, and the best means for its prevention, are not fully advanced to the standards of present knowledge. We therefore with pleasure give editorial prominence to the detailed and practical report by Drs. T. M. Prudden, H. M. Biggs and H. P. Loomis, pathologists to the Board of Health of New York City, who, having been requested to formulate a brief and comprehensive statement regarding the contagiousness of tuberculosis and the means of protection therefrom, have submitted the following :

The disease known as tuberculosis, and, when affecting the lungs, as pulmonary tuberculosis (consumption), is very common in the human being and in certain of the domestic animals, especially cattle. About one-fourth of all the deaths occurring in the human being during adult life are caused by it, and nearly one-half the population at some time in life acquire it. The disease is of the same nature in animals and in man, and has the same cause.

It has been proven beyond doubt that a living germ, called the tuberale bacillus is the cause, and the only cause, of tuberculosis. It does not seem necessary to state the facts upon which this assertion is based, for the observations first made by Robert Koch, in 1882, have been confirmed so often and so completely, that they now constitute one of the most absolutely demonstrated facts in medicine.

Tuberculosis may affect any organ of the body, but most frequently first involves the lungs. When the living germs find their way into the body they multiply there, if favorable conditions for their growth exist, and produce small new growths or nodules (tubercles) which tend to soften. The discharges from these softened tubercles, containing the living germs, are thrown off from the body. In pulmonary tuberculosis these discharges constitute, in part, the expectoration. The germs thus thrown off do not grow outside the living human or animal body, except under artificial conditions, although they may retain their vitality and virulence for long periods of time, even when thoroughly dried. As tuberculosis can only result from the action of these germs, it follows from what has just been said that when the disease is acquired it must result from receiving into the body living germs that have come from some other human being or animal affected with the disease.

It has been abundantly established that the disease may be transmitted by meat or milk from tubercular animals. The milk glands in milch cows often become affected with the disease when their lungs are involved, and the milk from such animals may contain the living germs, and is thus capable of producing the disease. Among stall-fed dairy cows 20 or 30 per cent. are sometimes found to be affected with the disease. Tubercular animals are also frequently killed for food; their flesh sometimes contains the germs, and if not thoroughly cooked is capable of transmitting the disease. Boiling the milk, or thoroughly cooking the meat, destroys the germs. Although the meat and milk from tubercular animals constitute actual and important sources of danger, the disease is acquired, as a rule, through its communication from man to man.

Tuberculosis is commonly produced in the lungs (which are the organs most frequently affected), by breathing air in which the living germs are suspended as dust. The material which is coughed up, sometimes in large quantities, by persons suffering from consumption, contain the germs, often in enormous numbers. This material when expectorated frequently lodges in places where it afterwards dries, as on the streets, floors, carpets, clothing, handkerchiefs, etc. After drying, in one way or another, it is very apt to become pulverized and float in the air as dust.

It has been shown experimentally that dust collected from the most varied points, in hospital wards, asylums, private houses, etc., where consumptive patients are present, or have been present, is capable of producing tuberculosis in animals when used for their inoculation. Such dust may retain for weeks its power of producing the disease. On the other hand, dust collected from rooms in institutions or houses that have not been occupied by tubercular patients does not produce the disease when used for the inoculation of animals.

These observations show that where there are cases of pulmonary tuberculosis, under ordinary conditions, the dust surrounding them often contain the tubercle bacilli; and persons inhaling the air in which this dust is suspended may be taking in the living germs. It should, however, be distinctly understood that the breath of tuberculous patients, and the moist sputum received in proper cups, are not elements of danger, but only the dried and pulverized sputum The breath and moist sputum are free from danger, because the germs are not dislodged from moist surfaces by currents of air. If all discharges were destroyed at time of exit from the body, the greatest danger of communication from man to man would be removed.

It then follows, from what has been said, that tuberculosis is a distinctly preventable disease.

It is a well-known fact that some persons, and especially the members of certain families, are particularly liable to tuberculosis, and this liability can be transmitted from parents to children. So marked and so frequent is this liability, and so frequent is the development of the disease in particular families, that the affection has long been considered hereditary. We know that tuberculosis can only be caused by the entrance of the germ into the body; and that this transmitted liability simply renders the individual a more easy prey to the living germs when once they have gained entrance.

The frequent occurrence ef several cases of pulmonary tuberculosis in a family is, then, to be explained, not on the supposition that the disease itself has been inherited, but that it has been produced after birth by transmission directly from some affected individual. Where the parents are affected with tuberculosis the children from the earliest moments of life are exposed to the disease under the most favorable conditions for its transmission, for not only is the dust of the house likely to contain the bacilli, but the relationship also between parents and children, especially between mother and child, are of that close and intimate nature especially favorable for the transmission by direct contact.

If, then, tuberculosis is not inherited, the question of prevention resolves itself, principally, into the avoidance of tubercular milk and meat, and the destruction of the discharges, especially the sputum, of tubercular individuals. As to the first means of communication, those measures of prevention alone answer the requirements which embrace the governmental inspection of dairy cows and of animals slaughtered for food, and the rigid exclusion and destruction of all those found to be tubercular.

For the removal of the second means of communication, i. e., the sputum of tubercular individuals—the problem is simple when the patients are confined to their rooms or houses; then wooden or pasteboard cups with covers should always be at hand for the reception of the sputum. These cups are supported in simple racks, and at least once daily, or more frequently, if necessary, should be removed from the racks and thrown with their contents into the fire.

The disposition of the expectoration of persons who are not confined to their rooms or homes is a far more difficult problem. The expectoration certainly should not be discharged on the street, and the only practical means for its collection seems to be in handkerchiefs, which, when soiled, should at the earliest possible moment be soaked in a solution of five per cent. carbolic acid and then boiled and washed. Handkerchiefs thus soiled are exceedingly dangerous factors in distributing tubercle bacilli; for when the sputum becomes dry, it is easily separated in flakes from the cloth, and then soon becomes pulverized and suspended as dust.

It becomes evident from what has been said, that the means which will most certainly prevent the spread of this disease from one individual to another, are those of scrupulous cleanliness regarding the sputum. These means lie largely within the power of the affected individual. It is, furthermore, to be remembered that consumption is not always, as was formerly supposed, a fatal disease, but that it is in very many cases a distinctly curable affection.

An individual who is well on the road to recovery may, if he does not with the greatest care destroy his sputum, diminish greatly his chances of recovery, by self-inoculation.

While the greatest danger of the spread of the disease from the sick to the well is in private houses and in hospitals, yet, if this danger is thoroughly appreciated it is, for the most part, quite under control, through the immediate destruction of the sputum and the enforcement of habits of cleanliness. But in places of public assembly, such as churches and theatres, particularly the latter, the conditions are different, and safety would seem to depend largely upon a dilution and partial removal of the floating and possibly dangerous dust by means of adequate ventilation.

Rooms in private houses and hospital wards that are occupied by phthisical patients should from time to time be thoroughly cleaned and disinfected, and this should always be done after they are vacated, before they are again occupied by other individuals.

Steamship companies should be obliged to furnish separate apartments for consumptive persons, so that no person in the exigencies of travel need be forced to share his room with one who might be a source of active danger to him.

We desire especially to emphasize the following facts:

1. That tuberculosis is a distinctly preventable disease.

2. That it is not directly inherited; and

3. That it is acquired by the direct transmission of the tubercle bacilli from the sick to the healthy, usually by means of the dried and pulverized sputum floating as dust in the air.

The measures, then, which are suggested for the prevention of the spread of tuberculosis are:

1. The security of the public against tubercular meat and milk, attained by a system of rigid official inspection of cattle.

2. The dissemination among the people of the knowledge that every tubercular person may be a source of actual danger to his associates, if the discharges from the lungs are not immediately destroyed or rendered harmless; and

3. The careful disinfection of rooms and hospital wards that are occupied or have been occupied by phthisical patients.—*Med. Age.*

PHLEGMON OF THE HAND.

* * * * * * * *

Case 2.—This patient presents with a phlegmonous inflammation of the commissure of the index-finger and thumb. You will bear in mind that the radial artery passes through this place, and an incision made through it is apt to injure that vessel.

This trouble, the patient says, has been going on for two weeks. Had it been attended to sooner it might have saved him considerable time and trouble. It will now be two weeks more before the wound will close up again.

This is a subject of very great practical importance to us, for it is just such cases as this that furnish a very large proportion of the surgical work done by every practitioner of medicine. There is, in my opinion, no better test of the surgical ability of a young physician than his manner of treating just such cases as this one. In the surgical management of these cases there are two courses that will be pursued, and we will now briefly examine these two courses.

Let us first of all recall to mind the natural history of that procesr that goes on in the soft parts of the palmar surface when one of these inflammations, which is commonly known as a felon, is going on. These inflammatory processes are generally suppurative in character and take their origin from some superficial injury to the integuments. The wound is either infected at the time of the injury, or it becomes subsequently poisoned by being brought into direct contact with the products of decomposition, as is generally found in the case of laboring men, butchers, cooks, waiters and others. The hands of these men are in contact with substances that are moist and infectious, and such people as these furnish a large proportion of the cases that habitually suffer from felons.

Now, we will say, they will inflict a slight injury on the palmar surface of the little finger, for example. Instead of attending to that injury, on the contrary, they neglect it, and as a result of that neglect, any infeetious material with which the finger is brought into contact will be carried into it by the lymphatics. Had the injury been severe enough to cause a hemorrhage, the stream of blood would wash away from the wound any decomposing or poisonous element, and the infliction of any subsequent injury would be refrained from, owing to the fact that the wound hurts the patient.

If you watch your own finger when you inflict a slight injury that causes no hemorrhage, you will notice the following process take place: The lymphatics have been opened, and, as a result of that, a very clear lymph material is exuded. If you do not wipe that away a thin crust forms over the wonnd in a short space of time. Every decomposing material brought into contact with the wound, while it is fresh, is carried by the lymphatics deep into the tissues, but the patient does not observe anything going on. The next morning he notices a small area of redness around the part and experiences some pain. This, however, does not deter him from continuing the work. and thus causing more mechanical irritation. Mechanical irritation consists in the pumping in, as it were, by reiterated muscular contraction of the pus-generating material into the deep-seated lymphatics. In certain portions of the body the circulation of the venous blood and lymph would be at once arrested if there were no other force at work than the contraction of the heart to overcome the law of gravity. That propulsive force is furnished by muscular contraction.

Now, in order to engage your attention more fully in this matter, let me state to you a well-known fact, viz: that a felon of the little finger or thumb is much more to be dreaded than a similar trouble situated on either one of the three middle fingers. In the case of a felon situated on either the little finger or thumb the suppurative process has a very marked tendency to run up to the arm. On the other hand, a felon situated on either of the three middle fingers will ordinarily run no further than the ball of the respective finger and perforate that region.

In order to thoroughly understand this peculiarity it will be necessary to study the anatomical relationship of the tendons and sheaths of these parts. In dissecting the palmar region of the hand you notice, as a rule, that the synovial sheath of the flexor tendons of thumb and little finger run into a common bursa in the palm of the hand. The sheaths of the flexor tendons of the three middle fingers, however, end proximally in a blind sac each. Therefore, when an inflammation attacks the little finger or thumb, the natural direction of the inflammation is towards the point of least resistance. After entering the common bursa of the hand it will proceed under the carpal ligament to the arm, and you have an inflammation that may, if unchecked, gradually destroy the usefulness of the arm, proceeding from a small focus in the little finger. When inflammation attacks either of the three middle fingers the pus usually perforates at the ball of the respective finger, and does no further damage than what has already been inflicted on the affected finger.

Now, realizing fully the dangers of a felon situated on either the little finger or thumb, what is our duty to the patient? We know, under the circumstances, that the safety of the entire arm is threatened. The man's bread and butter is to be earned by the cunning and skill of his hand and arm, and a very great responsibility devolves on the surgeon. We shall now see what is the proper course to pursue in these cases.

1. What is a phlegmonous inflammation or swelling of the palm of the hand? It is a septic, suppurative inflammation, developing in tissues extremely dense. And what is the direct result of an acute suppurative inflammation, developing rapidly in dense tissue? The affected structures will be subjected to very great tension—greater

than where the parts are soft and yielding, and as a consequence you have an occlusion of the minute vessels that carry blood to the tissues. As a result of this occlusion necrosis of these parts is produced. In that issue of the human body in which the highest known tension develops, becaase of its density and rigidity, viz: bone, suppuration at once causes necrosis, or partial death. What, then, is to be done in order to prevent this death? When the focus in that tissue is minute, containing but one or two drops of pus, when the patient's temperature is 104° or 105° F., when he has a headache and his tongue is foul and coated, when he has chills and cannot sleep at night, when he complains of a terrible throbbing pain in his hand, there can be no doubt in the mind of an intelligent surgeon that there is some serious trouble brewing, when so small a focus of inflammation throws the sufferer into such a state, If you have all these symptoms and are convinced that you have a focus of high tension developing, your first indication is to relieve that tension at once. How are you to accomplish that result? Is it by telling your patient to put his hand in hot water, or by the use of poultices, or by some internal medication, or by painting the skin with ointment or other material? No. Having found out the focus, you will take the scalpel and plunge it right down to the bone. If you have struck the right spot, when you again withdraw the knife three or four drops of pus will follow, and that means that the finger of your patient has been saved from great danger by this little operation. The man who waits until the entire finger or hand is involved, is no surgeon at all. The true conservative surgeon is he who will prevent the loss of a phalanx or a tendon, and will thus avoid the necessity for amputating the finger, hand or arm. That is what I would call conservatism. In former days "conservatism" meant the horror of the knife; now-a-days the conservative man is the one who *conserves* the tissues and life of his patient, whether it be by the knife or other effective means.

I will further say to you that if you relieve tension you will prevent the extension of that inflammation, even though you do not strike the exact spot where the minute focus of pus is situated. Even so, you have done your patient invaluable service, because the focus of disease will work its way in time into the incision. But, you may say, in the palm of the hand is situated a vessel I do not care to injure, viz: the superficial palmar arch. That is a bugbear that need not alarm you in the least. There are ways and means by which you can avoid wounding that vessel, and I will give you a few points that may help to guide you in making your incision. The palm of the hand is marked by a number of creases of the skin that resemble a capital *M*. Avoid that portion of the triangle bounded by the lines of this *M*, that occupies about the centre of the palm. It does not comprise more than a square inch.

A classical symptom of all deep-seated acute suppurative inflammations is that the skin over the affected area is abnormally pale in the beginning of the process. Acute osteomyelitis is popularly known as "hot white swelling" in contradistinction to the cold white swelling of tuberculosis of the joints. So in deep palmar suppuration you have pallor with dense swelling. Fluctuation you do not find. What, then, is the guide that is to lead you to discover the little focus of inflammation which may contain but a few drops of pus? Take a probe and first palpate in a general way so as to locate the place where the greatest pain is felt. When you touch the spot where the greatest pain is felt and the most intense sensitiveness exists, tell your patient to turn away his head and repeat the same process a couple of times until you are satisfied that the point of your probe has repeatedly touched the same precise locality pronounced by the patient to be the most sensitive. Then, having marked that precise spot, take your tenotomy knife, and, having applied local anæsthesia, plunge the instrument well into the tissues beyond the fascia. Should more than a few drops of pus escape, then the puncture must be extended to an incision. In order to prevent subsequent closure of the wound, take a small strip of antiseptic gauze and pass it into the aperture on the end of your probe. Then put on a moist dressing so as to prevent inspissation and the formation of a crust, and you have performed an act of conservative surgery of higher value to the patient and more creditable to yourself than the most brilliant amputation.—A. G. GERSTER, M.D., *in International Journal of Surgery.*

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PROGRESS IN MEDICAL EDUCATION.—The Iowa State Board of Health has decided that Iowa Medical Colleges, after 1891, must give a four years course if they desire their graduates to be admitted to practice within the borders of the Commonwealth.—*Medical Age.*

PROGNOSIS IN HEART DISEASE.

At a recent meeting of the "*Verein fü innere Medicin*," Dr. Leyden discussed the prognosis of diseases of the heart. The question, he said, presented great difficulties, depending not only on the object, but on the mode, of treatment. The difficulties were intensified by the fact that but few previous works were available. Most that had been written on the subject was to be found in English literature, the practical bent of English medicine showing itself in this also. The handbooks of Williams, Walshe and Bristowe contained observations bearing on the matter. Broadbent and Sir Andrew Clarke had delivered remarkable addresses on the subject. In America, Da Costa might be mentioned. The German text-books did not deal with the question with the precision and completeness that could be desired. He might, however, refer to essays by G. Mayer and Lewinsky.

Until a short time ago the prognosis of heart disease was looked upon as extremely bad. This universal opinion was enshrined in Corvisart's quotation, "*hæret lateri lethalis arundo.*" A more hopeful outlook had for the first time been taken quite recently. Experience had shown that many sufferers from heart disease lived in fairly comfortable ease. The lay public did not take so pessimistic a view of the matter as before. The gloomy prognosis laid down by Corvisart appeared to be confirmed by the fact that persons with diseased hearts often died suddenly. From this it was concluded that such patients were never safe any single instant of their lives. Closer examination, however—especially by English physicians—had shown that in the majority of chronic heart affections sudden death was rare, except in the case of inadequacy of the aortic valves (aortic regurgitation) and true angina pectoris (of Heberden). For both these diseases the proposition holds good that the patient is not safe any day of his life; but life may nevertheless be prolonged for years. In relation to aortic insufficiency, Dr. Leyden had had a very large experience, both in hospital and private practice. In other kinds of vulvular inadequacy sudden death was comparatively rare; in mitral incompetence it occurred in about two per cent. of the cases, that is to say, so seldom that the practitioner might leave this unfortunate termination out of account.

Further observations on prognosis might be grouped under three heads: (1) with reference to general disposition and circumstances of life; (2) with reference to special groups of cardiac affections; (3) with reference to particular physical and physiologico-pathological symptoms. In connection with the first of these, the age must first be considered. Young children bear heart disease very badly. In adolescence and early adult life the prognosis is better. This depends on the fact thas at that age those forms of cardiac affection chiefly occur in which the prognosis is relatively favorable. At more advanced periods of life heart diseases are for the most part associated with the arterio-sclerosis. This often became developed at a very early stage. Arterio-sclerosis had always a progressive tendency; this progressive character might, however, be very gradual. Compensative changes were easily brought about in more mature years. But precisely because of this progressive tendency those forms of vulvular insufficiency presented an unfavorable prognosis.

The second general etiological factor was the sex. The prognosis was, on the whole, better in the female than in the male sex. If this was less clearly the case in hospital than in private practice, that was due to the fact that women of the lower classes led a life exposed to the same hard work, the same mental disturbances, and partly the same excesses as men. In women of the upper classes these etiological factors were wanting. Arterio-sclerosis was, moreover, less frequent in the male sex, and even in families in which it was hereditary it affected the female members to a less extent. The female character was better adapted to bear troubles. Finally, experience proved that in women mitral incompetence, in which the prognosis was good, was more frequent than aortic insufficiency.

A third factor was to be found in the patient's circumstances and manner of life. Hard bodily labor was the most dangerous enemy to sufferers from cardiac disease. Even mental emotion often aggravated the condition. The less disturbed by worry the patient's life was, the more care he took of himself, the better was the prognosis; therefore the patients in better and easier circumstances bore heart affections better than persons less fortunately situated. A further point was connected with the possibility of treatment and the reaction of the constitution to medicines, of which digitalis was the most important. The right use of that drug was one of the most difficult problems in medicine. As long as digitalis produced its proper effect the prognosis was fair; if it failed, the prognosis became less favorable, as the effect of other drugs and therapeutic measures was far less certain.

From the diagnostic point of view three classes of heart affections have to be distinguished: (1) Organic defect or disease; (2) disease of the heart muscle; (3) vulvular incompetency.

1. With regard to the first of these divisions, the first question which has to be decided in the case of every patient who comes to a physician with disease of the heart is whether the disease is or is not organic—that is to say, whether a definite anatomical lesion underlies the symptoms. The inorganic affections are also designated nervous, neurasthenic, or functional disorders. The distinction between these and organic diseases is sharply defined, so that in a given case it is always easy to discriminate the one from the other. The answer to this initial question is always of the greatest importance, as a much better prognosis can be given in all merely functional affections. Nevertheless, even nervous affections of the heart are, in exceptional cases, especially in elderly persons, attended with evil consequences, and sudden death has been occasionally known to occur from start or fright. That the disease is inorganic may be presumed when accurate physical examination fails to reveal any abnormality. This proposition holds good with two exceptions. Murmurs, almost always systolic in time and loudest at the apex, may be heard in cases of inorganic disease; even dilatation may be present, as in Basedow's disease. On the other hand, there may be deep organic disease without any abnormality whatever discoverable by physical methods. These circumstances render the diagnostic and prognostic estimate of a particular case difficult. It is no longer possible to affirm that a heart in which murmurs are heard is diseased, and one in which no abnormal physical signs are present is healthy. Angina pectoris is very important in this connection. Three principal forms of that affection can be distinguished, namely, (*a*) angina pectoris vera, depending on disease of the coronary arteries, (*b*) angina pectoris symptomatica, which is occasionally met with in all forms of heart disease, and (*c*) angina pectoris nervosa. The first and third of these give rise to no physical signs, but are of very different importance. The whole circumstances of the case must, therefore, be taken into account. In elderly people, especially of the male sex, the disease is more likely to be of the organic form: in younger persons, particularly of the female sex, the probability is that it is of nervous origin. Nervous angina pectoris is, however, also met with in elderly men. As already pointed out, dilatation may occur in Basedow's disease. In such a case, however, the prognosis is

not unfavorable in proportion to the severity of the symptoms. Only when the condition is very pronounced, and when complications are present, is life threatened. With regard to the cardiac affections, which are associated with disease of the spinal cord, not much is known. In tabes, a form of angina pectoris is met with, whilst progressive muscular atrophy and bulbar paralysis often terminate with symptoms of paralysis of the heart.

2. With regard to the second of the three classes above mentioned, diseases of the myocardium—if those lesions of the heart muscle which are induced by incompetence of the valves be included under this head—constitute perhaps the most important point of the whole subject. The diagnosis of them is difficult, as they are only in small part open to physical methods. Those which can be diagnosed by physical signs may be arranged in three groups—hypertrophy, dilatation and want of power or weakness of the heart. In addition to these there are combinations of them, besides intermediate forms. The prognosis depends on the dangers which the structural changes entail, and on their amenability for treatment. Hypertrophy is not a disease in itself, and does not call for treatment. This point has been particularly emphasized by English physicians. Hypertrophy is the expression or the consequence of severe disease outside the heart—in the arterial system or in the kidneys. The prognosis depends on the gravity of the primary disease. In spite of the presence of hypertrophy, weak action of the heart may occur.

Dilatation is one of the most important conditions of the heart from the point of view of prognosis. It is the result of stretching of the muscular substance of the heart, and so far has a less favorable prognosis than hypertrophy. The physician must ask himself whether all dilatations are of equal importance, and whether the condition is susceptible of cure, or rather of improvement, by natural processes, or by medical treatment. There can be no doubt that important differences exist with respect to etiology no less than to prognosis. In the first place, dilatations which are consecutive to valvular incompetence must be distinguished from those which to all appearance occur independently of any previous lesion, and which O. Fräntzel has termed "idiopathic" dilatations. It must be borne in mind that, on the whole, dilatations of the right heart are of less importance than those of the left ventricle. The former may become developed suddenly, and may as suddenly disappear.

Hypertrophy of the right ventricle is not so easily retrogressive. Dilatations of the left ventricle are, on the other hand, of the greatest importance, although it cannot be disputed that even these have been cured in particular cases. This holds good especially of dilatations which come on rapidly after acute diease. Traube observed them in acute articular rheumatism; they occur also after typhoid fever, measles, scarlatina, diphtheria and erysipelas. The slighter forms reveal themselves only by "galloping" sounds; in more advanced cases there is displacement of the apex beat. All these dilatations are susceptible of cure, but it cannot be said that they are free from danger or always curable. Even dilatations of the left ventricle following overstrain, as also those occurring in Basedow's disease, may disappear. Dilatations which have been a long time in developing are less favorable in point of prognosis. In these cases the prognosis in individual cases depends on the degree of dilatation, the nature of the primary disease and the amount of compensatory change. If the primary disease is in itself an independent progressive process, such as arterio-sclerosis, the prognosis is unfavorable. It is true that an attempt may be made to improve the efficiency of the heart muscle, but in the majority of cases in which the condition is well-marked this will be only temporarily successful.

The newer methods of cardiac therapeusis—Oertel's dietetico-mechanical and Zander's gymnastic system, and balneological treatment—open up a prospect of the possibility of something more being done for those cases than has been accomplished by the treatment hitherto employed. Weakness of the heart's action has different causes, and correspondingly different prognoses. Fainting fits in young, nervous persons must always be judged differently from similar attacks in elderly men who are possibly the subjects of arterio-sclerosis. Acute weakness of the heart in febrile diseases must always be looked upon as a serious matter. Chronic weakness from valvular incompetence is also unfavorable. The new methods of treatment already referred to will have a good effect in this condition by increasing the size of the heart muscle. Weakness of the heart often depends on fattiness of that organ. A distinction must be made between cardiac disease due to accumulation of fat on the heart and that due to fatty degeneration of its substance. As long as there is no considerable alteration of structure in fatty heart, the prognosis is not bad. It is doubtful when dilatation is established. The prognosis in fatty degeneration is always bad.

3. With regard to the third class of cases, in which there is valvular insufficiency, in the first place it cannot be denied that cases of recovery occur (Beneke, Gerhardt). This happens most frequently in the case of recent mitral inadequacy which has come on with chorea. Recovery sometimes occurs, even in cases of aortic insufficiency. It must be recollected, however, that no inference as to cure can be drawn from the disappearance of a diastolic murmur. The further question, whether, without cure of the defect, the patient can be to a certain extent fit for work, and can have any enjoyment in life, is a very important one. It must be remembered that not infrequently heart disease is discovered accidentally in persons who feel perfectly well. There are cases of valvular lesion in which compensation remains complete through a series of years. Practitioners are not yet agreed as to the conclusion to be come to in such cases in relation to marriage, life insurance, etc.

The prognosis of aortic insufficiency depending on arterio-sclerosis is most unfavorable. If, besides the diastolic murmur, a heart-sound can be heard, and there is no arterio-sclerosis, the effect can be better borne. Further, the degree of hypertrophy in the left ventricle is of importance. The diagnosis is relatively better in simple mitral inadequacy. It is a mistake to take the loudness of the murmur as a guide in prognosis. The underlying essential disease is the important matter. If this is progressive, as in arterio sclerosis, the prognosis is bad; it is also mostly unfavorable in acute febrile ulcerative endocarditis. It is comparatively good in cardiac affections consecutive to acute diseases, such as measles, scarlatina, typhoid, articular rheumatism; in the case of the last-mentioned disease, however, both it and the endocarditis are apt to recur. Leaving the form of affection out of account, the prognosis depends on the condition of the heart muscle. Robust, well-nourished persons in good circumstances bear heart disease better than others. On the whole, the prognosis is better in systolic than in diastolic murmurs. A large number of systolic murmurs do originate within the heart, and even a considerable proportion of endocardial murmurs may disappear; only systolic murmurs with an arterio-sclerotic basis of serious import.

With regard to rhythmical irregularities, intermittence and arhythmia must be considered. The stoppage of the pulse has as such no serious prognostic significance; it may arise reflexly from the most diverse causes. Arhythmia is often habitual and of no importance. On the other hand, delirium cordis and tremor cordis are always suspicious. Tachycardia, as the expression of commencing or established paralysis of the vagus, is never unimportant. In fever a pulse of 120 is suspicious; only in children suffering from acute exanthemata can a higher pulse-rate be tolerated for any length of time without injury. Slowness of the pulse, on the other hand, is not of itself suspicious; it is often. however, a sign of weakness and an indication for strengthening treatment and a contraindication of digitalis. Permanent slowness of the pulse, when there is ground for suspecting arterio-sclerosis of the coronary arteries, is always risky. Not infrequently sudden death occurs under these circumstances.—*British Medical Journal.*

NITRATE OF SILVER IN PURPURA HÆMORRHAGIA.

Certain authors divide purpura into two forms—the sthenic and asthenic—a distinction which may be of service in furnishing therapeutic indications. The sthenic form is generally recognized by the pulse and the general state of the patient, and it may be imagined that in this form the walls of the capillaries are ruptured, without any alterations in their structure, on account of the exaggerated pressure in the circulatory system. In this form, reducing treatment is evidently indicated, and it is claimed that diminishing the blood-pressure will produce curative results. By far the greater number of cases of purpura hæmorrhagica, however, of the asthenic or cachectic form, of which the termination is so often fatal. In this form there is more or less diminution in the red corpuscles and the solids of the blood, with augmentation of the white corpuscles, the great danger being in the incessant tendency to hemorrhage, which finally leads to fatal prostration. In such cases the state of the patient calls for an improvement in the health of the patient, and to the building up of his strength rather than to depletion. As a consequence, vegetable acids, especially citric acid, mineral acids, hæmostatic astringents, all occupy the first rank as remedies which are indicated; ergot also, in subcutaneous injections in the form of ergotine, may likewise prove efficacious. To this list of remedies Dr. V. Poulet (*Bulletin Général de Thèrapeutique,* May 30, 1889) would add nitrate of silver, since he believes that the admirable results which this remedy produces in the treatment of purpura would almost warrant attributing to this remedy the possession of some specific properties. In support of this view Dr. Poulet reports two cases of purpura, which, he stated, were taken from his record of numerous others. In the first of these the hemorrhage resisted the most varied and energetic forms of treatment, such as hypodermic injections of ergotine, tamponing the nasal passages, etc., and finally yielded to the internal administration of the nitrate of silver. In the second case, the remedies employed were less numerous, but equally fruitless; and here also nitrate of silver was especially efficacious, for, in a short time, all tendency to the formation of purpuric effusions disappeared and the tendency to hemorrhages was entirely overcome. Dr. Poulet believes that nitrate of silver produces this effect in these affections by its action on the vaso-motor supply of the capillaries. He administers 1-6 of a grain of nitrate of silver twice daily in pill form, taking care to give it at least half an hour after eating.—*Therapeutic Gazette.*

THE BILIARY SECRETION IN MAN.

In the *Lancet* for June 1 and May 23 Mr. S. M. Copeman publishes an account of a biliary fistula occurring in a man, with some observations on the bile obtained from it. He finds (1) the normal amount of bile secreted by the liver is about forty-eight ounces, or two and a half pints, per diem in a man of twelve-stone; (2) the rate of flow varies in accordance with the time of ingestion of food, there being usually a rise between one and two hours after a meal. The secretion, moreover, is not a continuous one, the bile being extruded into the gall-bladder by repeated peristaltic contractions of the bile-ducts; (3) the color of the bile in man is probably always of an olive-green, biliverdin, and not bilirubin, being the pigment which is present in the greater quantity; (4) the amount of solids present is normally about ten per cent., this percentage being kept up by a continuous reabsorption of the bile salts from the intestine following on their secretion; the specific gravity of the bile falling when it is drained away as fast as formed, as occurs in a fistula. The amount may also be increased after the bile is first formed by absorption through the walls of the gall-bladder; (5) bile is necessary to the assimilation of fats; but not absolutely so, although doubtless of use, for that of proteids. Its purgative action is more than doubtful; (6) the bile has no true antiseptic action, although it is able to a small extent to control putrefactive changes; (7) stercobilin probably is formed by reduction of the bile pigments in the intestine; but urobilin appears to be formed in the liver, together with the bile pigments, by a slight change of metabolism.—*Therapeutic Gazette.*

A NEW MODE OF ADMINISTERING COD-LIVER OIL

M. Lefaki calls attention to a method of administering cod-liver oil which seems to possess considerable advantage (*Journal de Médecine et de Chirurgie,* May, 1889). If equal parts of cod-liver oil and lime-water are mixed together, a milky liquid is obtained which is inodorous, has the consistency of syrup, and may be flavored at will either with lemon syrup or vanilla, or other extract. The cod-liver oil thus saponified is almost agreeable to the taste, does not adhere to the mouth, and does not leave any nauseous after-taste. In addition to these advantages saponified cod-liver oil is preferable to the various emulsions which are on the market. In the first place, it is permanent, the fluid remaining homogeneous. It is readily assimilated even by weak stomachs; it may be administered even during diarrhœa; besides, it is combined with calcareous elements, which are likewise indicated in the affections which call for the use of cod-liver oil. Of course, the saponified oil may be associated with the phosphates or the hypophosphites of lime. Finally, it may be readily and rapidly prepared, and is of low price.—*Therapeutic Gazette.*

SPLENECTOMY — RECOVERY — CONDITION OF BLOOD MORE THAN A YEAR AFTERWARDS.

Dr. W. N. Maccall reports a case of splenectomy in a Jewess. Her spleen enlarged from repeated attacks of ague. Her enlarged spleen was mistaken for either left ovarian or peri-uterine tumor. Notes taken some years after the tumor first appeared: "The tumor is now centrally situated, lying in front of the uterus, extending from the pubes to the umbilicus, and measuring fully nine inches transversely. It is still painless, fairly firm, and smooth to pressure, and the fingers, pressed firmly behind it at the sides, feel firm rounded edges. It is still slightly movable, and evidently not attached to the uterus." I said: "This is *not* an ovarian tumor, as I had supposed; I have already decided that it is *not* uterine, but I am not at all sure what it *is*." Sir Spencer Wells decided it to be an enlarged and displaced spleen. In attempting to force the spleen into another position that she ruptured it, without breaking the capsule, as the flanks remained clear and the tumor fairly well defined. She was aspirated and ten pints of a somewhat thick reddish-brown fluid was withdrawn. There was early reäccumulation of the fluid, then Sir Spencer Wells agreed to operate. The tumor removed weighed four pounds. There were extensive adhesions. The splenic vessels were secured by silk ligatures. The patient was greatly exhausted after the operation, although there was little blood lost.

After a very tedious convalescence of three months, involving great care from physicians and nurses, she recovered. Blood removed from the spleen more than a year after the operation was examined by Dr. Dreschfeld. The blood, to the naked eye, had a perfectly normal appearance, and coagulated in the usual way. Examined microscopically, the blood appeared perfectly normal. The red blood corpuscles were of normal size and appearance: no poikilocytes, very few microcytes. The leucocytes were present in normal proportion. They were of the normal size, and, on the addition of acetic acid, showed compound nuclei. Examined with Gower's hæmocytometer, the average of several examinations showed 4,500,000 red blood corpuscles per cubic millimètre, and about 7,000 colorless corpuscles per cubic millimètre. Examined with hæmoglobinometer, the quantity of hæmoglobin was between 75 and 80 p. c.

PSORALEA (BUCK ROOT).

Prof. Maisch, in *The American Journal of Pharmacy*, gives some interesting notes on a genus of plants belonging to the Leguminosæ, which has heretofore attracted general attention by one of the western species *Psoralea esculenta*, which has long been known as a food among the Western Indians. It was introduced into France as a substitute for the potato, and became known as *picquotaine*, but was unsuccesful. Prof. Maisch quotes Mr. Clifford Richardson, of Washington, D. C.. and Dr. V. Havard, Surgeon U. S. A., for a botanical and chemical account of it. It seems that the plant has 69.60 of starch; 4.77, sugar; sweet substance soluble in water, 1.14, but no medicinal ingredient.

We have for sometime known that some of the physicians and druggists in Tarborough were interested in another species—*Psoralea melilotoides*. Prof. Maisch gives some items from investigations by Mr. Augustus Bradley and Mr. E. D. McNair, of Tarborough. The local names of the plant are given as Samson's snake-root, congo-root, pigtail root and Bob's root: the first of these names was long ago applied to no less than four gentians in the State. Mr. McNair obtained from the plant 2 p. c. of a volatile oil, having a bitter, pungent taste and neutral reaction. Starch is present, and a bitter principle which has not been isolated. Dr. Mettauer (in 1867) attributed to the root the properties of an aromatic bitter tonic and nervine, used by the negroes in an affection of the digestive organs known as poison. Mr. McNair has made a number of galenical preparations—Tinctura Psoralea composita, following the formula for Co. Tinct. Gentian, substituting psoralea for the gentian.

Psoralea canescens, known by the common name of Buck Root, is a species known to the negroes and country people in the Cape Fear district, is a hoary-pubescent plant, resembling a Baptisia. Its root differs from *Psoralea melilotoides*, being even—that is, not rugose. It is a little denser than a sweet potato, has a slightly sweet taste. This root is chewed for dyspepsia, and has about the same local repute as Sarracenia flava.

CORRESPONDENCE.

CALOMEL AND BICARBONATE OF SODA.

Messrs. Editors North Carolina Medical Journal:

I have often been asked by patients why we combine bicarbonate of soda with calomel. While it is not a general custom, yet very many physicians give this as a routine prescription. Why is the combination made? What is the difference in physiological action of calomel with bicarbonate of soda, or without? "There is some evidence to show that in the presence of bicarbonate of soda decomposition of calomel may take place, to a small extent, corrosive sublimate and metallic mercury being formed—that at the same time sodium chloride may be produced (carbon dioxide being evolved, and one or other of the two oxides of mercury being formed), and that the mercuric chloride (corrosive sublimate) and sodium chloride may combine to produce the double salt. $Na.\ Cl.\ Hg.\ Cl.^2$, ^2H_2O, or $^2Na.\ Cl.\ Hg.\ Cl.^2$ (both of which have been obtained.")

This is what I was taught. Now, I will ask if it is judicious to administer such a mixture if it has been long kept? If taken after being in the hands of a patient a long time shall we not expect too much increased violence of physiological effect?

Any brother making this matter clear will oblige.

J. A. Faison, M.D.

Mt. Olive, N. C.

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Novel Method of Detecting a Perforation of the Membrana Tympani.—In the *Boston Medical and Surgical Journal* for May 30, 1889, Dr. E. D. Spear calls attention to the following novel method of detecting a perforation of the membrana tympani: "While looking into the auditory canal in the ordinary manner, with speculum and mirror, hold a piece of clear, cold glass close to the speculum, have the patient do the "Valsalvian" experiment, and if a perforation exists the vapor of the breath will be condensed upon the glass and obscure the view.—*Therapeutic Gazette.*

NOTES.

"THE worst air for a patient is that which has given rise to the disease."—CELSUS.—*Dr. Hurd on Consumption as I have known it.*

ANTIFEBRIN is soluble in spirits of nitrous ether, and will remain unchanged for a considerable length of time.—DR. HUMPHREYS *in Therapeutic Gazette for July.*

TO DETECT ANTIPYRIN.—(*Pharm. Jour.*) Put a few grains potassium nitrate in a test tube, add a little water and an excess of sulphuric acid, then fill the tube with suspected fluid. The reaction is green if antipyrin be present.—*Jour. Am. Med. Ass.*

ANTIPYRIN IN CHOREA AND TETANUS.—Dr. A. Garland, of New Zealand (*Brit. Med. Jour.*, July 6) gives some notes on a case of choreic convulsions, in which, after 21 days treatment, chloral with bromide potassium (in full doses) failed to produce sleep, he administered antipyrin in 10 gr. doses every 4 hours in the afternoon, and patient got a good sleep, and in 3 days was practically well. He also gave antipyrin in a case of tetanus, and although the patient died, the spasms were much relieved by the drug.

SALOL AS AN ANTISEPTIC.—Just as antipyrine, after its original application, was found to have numerous other equally effective uses, so it is now with salol, which seems therefore likely to command a more extensive patronage. One of these seems to be really important. The antiseptic properties of the compound have always been recognized, but salol had never been applied externally. Now, however, continuing the parallel with antipyrine—the most important property of which was discovered in a country other than that in which it was first used—salol has been proved to be a valuable anfiseptic in France, Italy and Switzerland. It is specially recommended as a substitute for iodoform, in all cases in which the latter has been previously used, and, considering its freedom from objectionable odor, it is not astonishing that its application in this direction should find favor. Moreover, it is not toxic, which is more or less the case with iodoform. Another advantage is that it is about 20 per cent. cheaper than iodoform.—*Chem. and Drugg.*

CHLOROFORM DEATHS IN OBSTETRIC PRACTICE.—Charpentie (*Bull. de la Soc. Obstét. de Paris*, No. 5, 1889) in a discussion on obstetrical anæsthesia before the Obstetrical Society of Paris, quotes the researches of Duterte, who collected forty cases of death attributed to chloroform. He eliminated thirteen of these in which another adequate cause of death was present. But very few of the remaining twenty-seven were free from pulmonary or cardiac disease, and chloroform had been given to the extent of complete or surgical anæsthesia in these cases; in quantities sufficient to produce obstetrical anæsthesia it is very rarely dangerous.—*American Journal of the Medical Sciences.*

WHAT DOES THIS MEAN?-- A MEDICAL JOURNAL TRUST.—It is currently rumored that a combination of prominent proprietary and patent medicine houses has been formed to furnish capital to and control what is proposed to be substantially a "Medical Journal Trust." These rumors have grown from the announcement sent out a short time ago when several medical journals in Philadelphia were consolidated under the name of the *Times and Register.* It is said that this combination, which is known as the American Medical Press Association, proposes to gradually absorb all the medical journals of this country. The way this is to be accomplished is for the combination of manufacturers to withdraw their advertisements at the same time from one journal, and use every other means they can to cripple it, so that it can be bought in at a low rate. This plan is to be continued slowly and cautiously, so as to avoid publicity, until all of the journals are gradually taken in. Such a combination, if it should be completed and conducted in accordance with the peculiar honesty and principles that the *Times and Register* is now advocating, as will be noticed in an article in this issue headed "Justifying a Fraud," would certainly make a spectacle that would bring everlasting disgrace on the medical profession of this country and on all who have had anything to do with so unprincipled an undertaking. On any kind of a basis such a "medical journal trust" would give nostrum mongers a powerful weapon with which to humbug and deceive the medical profession; and its progress will most surely be opposed by all respectablr journals, physicians and druggists, and by the general public.—*Druggists Circular and Chemical Gazette.*

AUVARD has devised an instrument combining a cranioclast and cephalotribe.—*Am. Jour. Med. Sciences.*

IN the United States it may be assumed that 50,000 insane persons are in the State, corporate and municipal hospitals; that $60,000,000 have been expended on the plant necessary for their care; and that $10,000,000 are annually raised by taxation for their maintenance, exclusiee of the large amount expended in the construction of county asylums and for the yearly support of the insane in those institutions. The average life of an insane person is fifteen years, and his support will cost his friends or the State the sum of $3,750. The large amount of money raised by taxation for the maintenance of the insane, the proper disposition of those who become a public charge and their varied relations to the State, are social problems involving large public and private interests. They have been the subject of discussion almost exclusively by the physicians and managers of hospitals for the insane, by the medical profession, and occasionally by committees of State Legislatures on the occasion of some special agitation for the creation of a new hospital.—*American Journal of the Medical Sciences.*

TREATMENT OF TABES BY SUSPENSION.—Bernhardt (*Deutsch. med. Wochenschr.*, 1889, No. 21) has, during the last quarter of a year, treated 19 patients, with about 220 suspensions. Most of these were tabetic patients, some of whom had received more than 20 suspensions, others between 15 and 20. By all, even the very ataxic, the treatment was well borne. Apart from the beneficial psychic effect on the patient of a new method of rreatment, there was an indubitable improvement in nearly every case. Some, it is true, stated rhat they felt no better, but in the majority Bernhardt recorded amelioration of the lancinating pains, increased ability to walk, diminution of the ataxia, incaeased vesical power, in some cases a decided influence on the lost sexual power, and in nearly all an improvement in the general condition. He warns, however, against viewing this plan of treatment as a panacea for such a chronic disease as tabes is, and says that it has not yet been used long enough to permit of a final judgment on its value. It is certain, however, that it is a valuable means, though not for the healing of tabes, yet for the amelioration of many of the most distressing symptoms of the disease.—*Amer. Jour. of the Medical Sciences.*

SILICO-FLUORIDE SODIUM.—Robson: *disinfectant:* as a wash, one grain to the ounce of water; known as salufer.

AN EXPERIMENTAL INVESTIGATION OF STRYCHNINE POISONING.—At the suggestion of Dr. Henry P. Bowditch, the work was undertaken by Dr. Robert W. Lovett (*Jour. of Phys.*, Nos. 3 and 3, 1888) to ascertain if the spinal cord showed any special facility in taking strpchnine from the circulation and storing it up in its tissues; or, in other words, to determine whether strychnine exercised its peculiar power upon the spinal cord because there was more of the drug present there than in the other organs, or because the cord was more perceptible to its action than muscle, brain, liver, etc. After a careful and minute investigation of the subject the problem is answered, in a general way, as follows: 1. The spinal cord has the power of selecting strychnine from the circulation and of storing it up in its structure, for at the occurrence of convulsions, or at a definite time after the injection of a certain amount of the drug, the cord is found to contain relatively more than the liver, the muscles, the brain or the ovary. That the fact is not due to the marked vascularity of the cord, is shown by taking into consideration the rich vascularity of the liver, which yet contains a smaller amount of the drug, as compared with that of the cord. 2. At the time of convulsions the relative amounts of strychnine in the blood and in the spinal cord vary with the amount of the drug administered. If it is a large dose, the blood contains overwhelmingly more; but if it is a small dose, a larger amount relatively is found in the cord than in the blood. The amount of the drug in the cord necessary to produce convulsions seems to be more or less constant, independently of the dose, the surplus of the same in the blood being, apparently, in proportion to the size of the dose administered. The author concludes that the spinal cord in cases of strychnine poisoning cartainly contains more strychnine than other organs; but whether or no it is more susceptible to the drug than other organs cannot be ascertained at present. It is added, also, that, in a medicolegal sense, the work is of importance as regards the storage power of the spinal cord for strychnine, and especially where the stomach contents cannot be relied upon in cases of poisoning by this drug; and in this respect it is an addition to the work of Dr, Chittenden on the "Significance of the Absorption and Elimination of Poisons in Medico-legal Cases."—*New York Medical Journal.*

A PROFESSOR of the Cairo Medical School, while blowing into a vaccine tube, inoculated his lower lip, and developed a splendid vesicle, and yet in childhood he had gone through a severe attack of small pox.—*N. Y. Medical Abstract.*

Mercurial Vapor in Croup.—(*Lancet*) Dr. Rothe, of Altenburg, relates (*Memorabilien*), two cases of apparently non-membranous croup in which, when the laryngeal stenosis became so great as to oblige him to propose tracheotomy, the inhalation of the vapor of calomel produced such a remarkable change for the better that he was able to dispense altogether with the operation. He rigged up a sort of tent over the child's head and vaporized thirty grains of calomel on a metal plate over a spirit lamp.

Inguinal Ectopia.—M. Championière called the attention of his colleagues to the treatment of inguinal ectopia by fixing the testicle to the bottom of the scrotum by pressing on the little organ and forcing it out of the canal. His friend, M. Tuffier, cited several cases in which the treatment succeeded. The testicle was fixed by two or three sutures passed through the external covering of the gland avoiding, as far as possible, wounding it. The result is always satisfactory. The speaker said that for sometime before the operation traction should be made daily on the testicle in order to facilitate its descent. M. Monod said that the fixing of the organ in the scrotum was rarely practised hitherto. The operation was recommended first by Cholins, by Koch, and more recently by Max Schuller in 1881. In order that the operation should succeed the testicle should not go up beyond the iuternal ring, and the boy should be from twelve to sixteen years of age, for after twenty success is very doubtful. In young children the affair should be simply watched, as migration of the organ is still possible. In the case of the ectopia being complicated by a hernia, the radical cure of the latter should be attempaed and the testicle fixed to the scrotum. M. Berger said that Prof. John Wood, of London, insists on the difficulty of operating when the cord is short. M. Berger said also that he had met with two cases where the testicles at birth were in their proper position in the scrotum, but subsequently one went up into the inguinal canal, and finally into the abdomen.—*M. Press.*

The Testicle as a Rejuvenator.—Twenty years ago, at least, Dr. Brown-Séquard exhibited tendencies towards a belief that the testicle might be of value for other purposes than the impregnation of the ovum. provided it was taken when young—that it was competent, when its vital principles were properly injected for the respective purposes, not only to call into existence the very young, but to rejuvenate the aged. It seems that this idea has continued to germinate in the brain of the learned, but eccentric, physiologist all these years. In 1875 he made experiments with grafts of testicular tissue upon dogs, and to his delight succeeded, as he thought, in renewing the youth of one wretched old cur. Since then he has continued these strange investigations at various times, and during the month of June. this year, made two separate communications to the Société de Biologie of Paris upon this subject, describing the methods used and the supposed results. He, apparently, thinks he has discovered a sort of *elixir vitæ*, or fountain of perpetual youth, of simpler composition than those elixirs so sedulously compounded by the mediæval philosophers, and easier of access than the elusive fountain which enticed poor Ponce de Leon to his fond and fatal journey. According to the reports of Brown-Séquard's communications given by the French journals, he has been experimenting with a fluid obtained by crushing and washing the testicles of young animals, which was mixed with blood from the spermatic veins and water. This fluid he injected into his own subcutaneous cellular tissue almost every day for two weeks, with results so gratifying that he hastened to communicate them to his biological confrères. Notwithstanding his ripe age, between seventy and eighty years, he experienced a rejuvenescence of all his forces, physical and mental. The former healthy and vigorous contractility of the intestines and bladder had returned, as also had his general muscular strength. Intellectual labor had again become easy to him. Dr. Brown-Séquard did not succeed apparently in inoculating his hearers with his own enthusiasm for his procedure. Scepticism and physiological objections found expression through MM. Dumont-Pallier and Féré. Nor did the Society treat his results with sufficient seriousness to discuss the question as to the value of the ovary for similar purposes, or as to the possible results of injecting subcutaneously an ovarian aqueous extract into the male and a testicular extract into the male.—*Boston Medical and Surgical Journal.*

UROTHEOBROMIN.—One of the alkaloids of urine.—*M. Press.*

SUGAR IN URINE—A SIMPLE TEST.—Dr. H. Hager, one of the most industrious practical pharmacists of the world at the present time, has suggested the following test in a recent issue of the *Pharm. Zeitung:* "Upon a strip of white filtering or blotting paper place a single drop of urine and carefully heat to dryness. If it contains no sugar the stain is hardly to be seen, or is very faintly yellow; if it contains albumen the stain is of a deeper yellow, and at times with a reddish tinge; if it contains sugar the spot will be of a yellow with a brownish cast, the shade of brown varying in intensity according to the sugar present, and under a magnifier by transmitted light the outer portion of the spot will have darker spots, while normal urine is more of a uniform color, The object of this test is to afford the physician a ready method of bedside determination of urine preliminary to more detailed methods. It can readily be done, using a kerosene lamp as the source of heat. The principal precaution is to avoid an excess of heat."

HONORS TO DR. JOHN S. BILLINGS.—Dr. Billings, of the army, sailed for Europe on Wednesday, June 12th, in company with a number of physicians, some of whom are delegates to the Leeds meeting of the British Medical Association, to be held in August, It has been announced that Oxford University will confer on Major Billings an honarary doctorate in consideration of his many labors on behalf of the Johns Hopkins University, the Army Museum and the "Index-Catalogue." The general orders of the Surgeon General of May 13th, which contemplated the attendance of Dr. Billings, as the representative of the medical department of the army, at the American Medical Association's meeting at Newport, have probably been recalled to enable him to receive his new distinction in person. It is only a short time ago that the telegraph informed us of the bestowal upon Dr. Billings of an honorary doctorate of medicine by the University of Munich, conferred upon him in recognition of his work as a sanitarian. In the last issue of this journal we published the Surgeon General's authorization to Major Billings to participate actively in the work of the forthcoming Federal census. This assignment to special duty with the Census Bureau is without doubt a high honor, but it is also an onerous addition to a career that knows few idle hours.—*N. Y. Medical Journal.*

A CHEAP inhaler may be made by wrapping a piece of paper around a lead pencil.—*N. Y. Med. Abstract.*

ACCORDING to a writer in the *British Medical Journal,* tetanus in the horse can be cured by 20 grs. of antipyrin every fourth hour day and night for 48 hours.

PICHI (*Fabiana imbricata*).—Indigenous to Chili; used in catarrhal inflammation of the mucous membrane of the bladder and kidneys; dose, 15 drops of the fluid extract.—*N. Y. Med. Abstract.*

THYME.—Johnson: *whooping-cough:* one ounce of the common herb is boiled down from a pint and a half of water to a pint; if there is much inflammation of the bronchial tubes, two drachms of pot. iod. and pot. chlorate are added to each pint; dose, 1 or 2 teaspoonfuls every hour to infants.—*N. Y. Med. Abstract.*

READING NOTICES.

A. CRALL, M.D., Dittmer's Store, Mo., writes: "I have used Lactated Food in chronic gastritis in adults with the best results. In this case the blandest nourishment caused great discomfort. The Lactated Food was first given simply with water, later with milk. It was well borne and greatly relished by the patient. The result of this case was so satisfactory that I shall prescribe Lactated Food in all those cases, when its use is indicated."

STERLING, Ill., January 19, 1889.—*To Messrs. Reed & Carnrick*—*Gentlemen:*—Allow me to congratulate you upon the efficient and elegant combination of Phospho-Caffein Compound, for headaches, neuralgia, insomnia, neurasthenia and general nervous irritability. I have never found its equal. I have had the satisfaction of getting early and satisfactory results, and therefore cheerfully recommend it to the general practitioner as a valuable combination.

Very truly yours,
JOHN H. CRANDALL, M.D.,
Health Commissioner City of Sterling, President U. S.
Examining Board of Surgery for Pensions.

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ORIGINAL COMMUNICATIONS.

REPORT OF CHAIRMAN OF SECTION ON STATE MEDICINE—THE NEED OF A STATE BOARD OF CHARITIES IN NORTH CAROLINA.

By KEMP P. BATTLE, Jr., M.D., Raleigh, N. C.

(Read before the Medical Society of the State of North Carolina, at Elizabeth City, April 16, 1889.)

Mr. President and Gentlemen of the Medical Society of the State of North Carolina:

In considering the subject of State Medicine in North Carolina it seems to the writer that the State Board of Health, the benefits accomplished by it in the past, the work being done in the present and the objects being aimed at in the future, occupies the most important place in the sphere of work about which this Section should concern itself. But these topics are so well known, chiefly through the labors of the excellent and indefatigable Secretary of the Board that it appears better, in preparing a report for the Section, to select some special subject more or less connected with the Board, but about which less has been said. The attention of the Society is therefore respectfully called to the need in North Carolina of the services usually rendered in other States by State boards of charities and correction. Some of the duties that would devolve upon a properly constituted board of this kind are now undertaken by the Board of Health, but the machinery allowed it for these purposes are entirely inadequate, while for many other important and necessary duties there is no provision whatever, either in the Board of Health or anywhere else.

It is not generally known, certainly among the younger members of our profession, that the establishment of a Board of Charities is commanded by our State Constitution, that not many years ago such a board was provided for by the General Assembly, was in existence for a number of years, and that it languished and died. It may be of some interest to recall its career. In the Constitution adopted in 1868 the following will be found:

"ARTICLE XI., SEC. 7.—PROVISION FOR THE POOR AND ORPHANS.

"Beneficent provision for the poor, the unfortunate and orphan, being one of the first duties of a civilized and Christian State, the General Assembly shall, at its first session, appoint and define the duties of a Board of Public Charities, to whom shall be entrusted the supervision of all charitable and penal State institutions, and who shall annually report to the Governor upon their condition, with suggestions for their improvement."

Accordingly in the Public Laws of 1868–'69 appears the following law:

"AN ACT PROVIDING FOR A BOARD OF CHARITIES, AND PRESCRIBING THE DUTIES THEREOF.

"SECTION 1. *The General Assembly of North Carolina do enact*, That the General Assembly shall, immediately on the ratification of this act, proceed, by concurrent vote, to select five electors, who shall be styled the Board of Public Charities of the State of North

Carolina. One of the persons so selected shall hold office for one year, one for two years, one for three years, one for four years and one for five years; the term of office to begin the first of July, 1869. Appointments to fill vacancies in this Board, caused by resignation, by removal from the State, death, or from any other cause, may be made for the residue of such term by the Governor.

"SEC. 2. The Board of Public Charities shall hold regular meetings on the first Tuesday in January, April, July and October, and as often besides as they may deem needful. They shall make such rules and orders for the regulation of their own proceedings as they may deem proper; they shall investigate and supervise the whole system of the charitable and penal institutions of the State, and shall recommend such changes and additional provisions as they may deem needful for their economical and efficient administration, and no changes shall be made in the management of any of the institutions without the advice or consent of the Board. They shall receive no compensation for their services except their traveling expenses, which shall be allowed and paid.

"SEC. 3. The general condition of the State as affected by crimes, vagrancy and pauperism, shall also come under the view of the Board, and it shall be their duty to report to the General Assembly when, in their judgment, it may become needful for the erection of the several reformatory institutions whose organization is provided for in Article XI of the Constitution.*

"SEC. 4. The Board shall give special attention to the causes of insanity, defect or loss of the several senses, idiocy and the deformity and infirmity of physical organization. They shall, besides their own observation, avail themselves of correspondence and exchange of facts of the labors of others in these departments, and thus be able to afford the General Assembly data to guide them in future legislation for the amelioration of the condition of the people, as well as to contribute to enlighten public opinion and direct it to interests so vital to the prosperity of the State.

"SEC. 5. Personal visits may be required by the Board of one or more of its members, or otherwise, to make careful investigation into the condition of the several county jails and almshouses, and the treatment of their unfortunate inmates, and report on these points, so that the provisions of Secion 6,* Article XI of the Constitution may be enforced.

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*Houses of correction, of refuge, for orphans, deaf mutes, blind and insane, and "means of education" for idiots and inebriates.

"SEC. 6. Whenever the Board shall have reason to believe that any insane person, not incurable, is deprived of proper remedial treatment, and is confined in any almshouse or other place, whether such insane person is a public charge or otherwise, it shall be the duty of said Board to cause such insane person to be conveyed to the State Asylum. there to receive the best medical attention. So, also, it shall be their care that all the unfortunates shall participate in the charities of the State.

"SEC. 7. The Board may require the Superintendent, etc., of the several charitable and penal institutions of the State to report to them of any matter relating to their inmates, their manner of instruction and treatment, with structure of their buildings, and to furnish them any desired statistics at their command.

"SEC. 8. The Board of Public Charities shall annually prepare and submit to the General Assembly a complete and full report of their doings during the preceding year, showing the actual condition of all the State institutions under their control, with such suggestions as they may deem necessary and pertinent, which they shall print.

"SEC. 9. This Board shall make a special report to the General Assembly of 1870, on the cause of crimes, pauperism, etc.

"SEC. 10. This act shall be in force from and after its ratification.

"Ratified the 10th day of April, A. D., 1869."

The following gentlemen were accordingly elected as members of the Board: G. W. Gahagan, Dr. G. W. Blacknall, Rev. G. Wm. Welker, Dr. Eugene Grissom and William Barrow. Their terms of office were designated by lot, and the names are given according to length of term from one year to five. At the first meeting Mr. Welker was chosen President and Mr. W. J. Palmer, the Superintendent of the Institution for the Deaf, Dumb and Blind, accepted the position of Secretary. Steps were afterwards taken through the

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*This section is as follows: "It shall be required, by competent legislation, that the structure and superintendence of penal institutions of the State, the county jails and city police prisons secure the health and comfort of the prisoners, and that male and female prisoners be never confined in the same room or cell."

Secretary to collect information in regard to poor houses and jails, and to learn the number of idiotic and insane persons in the State by means of circulars sent to every chairman of the Boards of County Commissioners. Dr. Blacknall was also appointed a special agent to make a personal inspection of as many of these institutions as practicable and report. As requested by the General Assembly, the obtaining of information in regard to suitable buildings for the insane in different parts of the State was provided for, and the Secretary was directed to address the annual convocations of the different religious bodies and urge upon the ministers the duty of visiting the criminals and paupers of their counties. This was the extent of the work undertaken that year by the Board, and the result appears in their First Annual Report, of 137 pages, dated February 10, 1870, and signed by three members: Mr. Welker, Dr. Grissom and Dr. Blacknall. There is first a more or less general but able discussion of the work of the penal and charitable institutions of the State, and then follows the report of the Secretary. This consists chiefly of compilations from the replies from the counties to the circulars above mentioned, and to these are added the special report of Dr. Blacknall and short statistical reports from the Penitentiary and the Insane Asylum. The replies to the circulars are presented under distinct heads: 1. A general report of the condition of the prisons and poor houses in the State. There were 19 questions in regard to the condition of the prison buildings, their management and the treatment of the prisoners, and 34 questions of a similar kind in regard to poor houses. Returns were received from 80 counties and a full synopsis of the report of each is given—the whole filling 75 pages: 2. Tabular statements showing (1) the number, condition, etc., of the inmates of poor houses; (2) the number of prisoners confined in the county prisons; (3) the ages of prisoners; (4) the crimes and causes of confinement, and (5) the number of insane and idiotic persons in prisons, poor houses and private families in 43 counties.

The allowance of travelling expenses seems to have been construed as confined to those in connection with meetings of the Board, and only expenses reported for the first year are $21 for postage and printing, stationary having been furnished by the Secretary of State.

In March, 1870, the law establishing and defining the duties of the Board of Charities was supplemented by an act then ratified requiring county and township officers to furnish annually, on blanks furnished by the Board, information of the kind asked for in the circulars sent out the year before, and the penalty of a fine of one hundred dollars was provided for non-compliance.

The Second Annual Report was a special one of some pretension, on the causes of crime and pauperism, was presented late in the session of 1870 and 1871, received no attention from the Legislature, and is not found in the bound volumes of Legislative Documents.

The Third Annual Report is a short one, dated December, 1871. It states the inability of the Board to secure the gratuitous services of a competent Secretary since the resignation and removal from the State of their former efficient one, Mr. Palmer, asks an appropriation for the salary of a Secretary, and explains the impossibility of doing what was expected of them without money. The receipt of the reports from counties provided for by the act of March, 1870, is acknowledged, but the material was not utilized for the want of the services of a Secretary. The report is signed by Mr. Welker, Dr. Grissom, Dr. Blacknall and by Dr. C. T. Murphy, of Sampson county, a new member.

At the next session of the Legislature the original law was modified: The clause requiring "the advice or consent" of the Board previous to changes in management of charitable and penal institutions was stricken out, the traveling expenses of the members were allowed for one meeting annually and no more, and the printing of their reports was no longer allowed them. Among other results of these changes the blanks for county reports ceased to be sent out, and the excellent law requiring them became a dead letter.

The Fourth Annual Report was presented at the session of '72–'73, and was signed by Dr. C. T. Murphy, who had been elected President, Dr. Grissom and Dr. Blacknall. It calls attention to the fact that the General Assembly had persistently neglected the Board and its reports, that its action was crippled by the changes made in the original law, and that its request for a Secretary, an officer necessary for the accomplishment of its duties as required by law, had been refused. The body of the report is made up chiefly of general criticisms of the almshouses and jails based on a personal inspection of some of them by Dr. Murphy and of others by Dr. Blacknall, as before mentioned, an argument for the medico-legal supervision of prostitution, and a number of suggestions with reference to the

Board and the institutions under its supervision. It is stated, also, that Dr. Grissom declined a reëlection. A bill meeting the wishes of the Board was drawn and passed the Senate, but failed to pass the House for want of a suitable champion. At the session of 1874–'75 a joint committee on Public Charities was appointed, who seemed favorable to the views of the Board, but the chairman was called home for the rest of the session by sickness and nothing was done. The membership of the Board, however, was kept up, although little work was done for several years, the annual reports being short and of no special value.

After the Constitutional Convention of 1875 had met and had left untouched the provision for a Board of Charities, the members of the Board, headed by Dr. C. T. Murphy, made one more effort to put life into it by a vigorous appeal to the General Assembly, through Governor Vance, for $1,500 as salary of a Secretary. The other members at this time were Captain C. B. Denson, Dr. Blacknall, V. R. Sharp and J. T. Morehead, of Guilford. Governor Vance, when transmitting this report in his first Message, January, 1877, complimented the President, commended the purposes of the Board and recommended that its members be allowed reasonable salaries. A committee was appointed, a bill was introduced—and killed, and the Board of Charities was dead. At the same session, by an act ratified February 12, 1877, the foundations of the present State and County Boards of Health were laid.

The law creating the Board of Charities was in many respects an excellent one. The Board made a good beginning along some lines, and if it had been properly supported by the General Assembly it would have continued to exist and would have been productive of great good to the State. What were the causes of the legislative indifference which led to its failure it is needless now to discuss. It failed, and there is nothing which properly occupies the whole field of duty for which it was intended. Section 2 of the law provided for the investigation and supervision of the charitable and penal institutions of the State and for recommendations, when needful, looking to their economical and efficient management by a board established with these objects in view. There ought to be, now and all the time. a board of some kind charged with these duties, and its members ought to be altogether outside of, and independent of, the more direct management of these institutions. The reasons for this are the same as for the propriety, which is nowhere denied, of the appointment of legislative committees for similar purposes. But still stronger reasons can be given for the existence of such a Board. Legislators, many of them, enter upon these special duties totally unacquainted with that which they are to investigate, their visits are expected and prepared for, they see things when at their best only, and however competent they may be they have not the time to discover defects if any exist. Their work is, from the nature of the case, often perfunctory, and may be a complete farce—and none understand this better than the officers of the institutions visited. The members of a Board of Charities, however, being comparatively permanent officials, could make their visits at unexpected times and could take time to thoroughly familiarize themselves with the entire administration of the various institutions. From the point of view of the State, therefore, it is clear that the supervision of such a Board would be more likely to secure the best results than the present plan. From the standpoint of the officers it would be equally advantageous. The Board might be of assistance to superintendents by suggesting details in which improvement might be made and which had been overlooked. And thoroughly appreciating their necessities it could be of especial service to them in representing them before the General Assembly or its committees. According to the present plan it is necessary for a superintendent or warden to spend valuable time, which ought to be devoted to the institution which he controls, in disagreeable attendance upon the General Assembly at every session. The Board having many institutions in its field of view, and having both their interests and those of the State at heart, would be listened to with confidence by legislators who now are apt to look with disfavor upon the demands of the immediate officers, for the reason, apparently, that they suspect them of striving to secure as large appropriations as possible, regardless of the financial condition of the State or its people.

It is not meant that the Board should have too much power in this direction. To give it executive functions might introduce confusion and do more harm than good. It should be advisory in its scope and no more. Nor is it meant to be intimated that there is any special need at the present time of the supervision spoken of. The management of the Penitentiary and of the great charities of the State is believed to be good, and in some of them admirable, but all men who are human are liable to get into ruts, and any machinery ought to be welcomed by them which promises to help them to the attainment of excellence. As regards the present separate Boards of Trustees, they would be no more superseded than they now are by the system of direct legislative investigation.

Another field for the energies of a State Board of Charities is that of inspection of the county jails and almshouses and investigation of their management. It ought to be obligatory that every county should receive a visit at least once a year, at an unexpected time, from some member of the Board or from a special visiting agent. It is true that the Board of Health, through its reports of county superintendents, is working in this direction, and much good has been accomplished. The Secretary, in his second biennial report to the General Assembly, very properly expresses gratification at the improvement in many of the county public buildings and the condition of their inmates since the beginning of the publication of the *Bulletin*. It is believed that there is now no instance of such a deplorable state of affairs in a county jail, for example, among the counties reporting to the Board, be it noted, as the one so vividly described and vigorously commented upon in the Annual Message of the able President of the Society, read at the Charlotte meeting in 1887. But much more might be done even in the reporting counties. The county superintendents are believed to be, as a rule, conscientious and faithful officers, but the scope of their reports is practically confined, as contemplated by the present law, to sanitation alone, and there are many and important details in connection with these institutions. with which they have nothing to do, and which also need the light of publicity. In many counties they will agree that even in sanitary matters any assistance that they could get in their efforts at securing improvement in the condition and surroundings of the unfortunates with whom they have to do would be welcome. What is needed is that the present system should be supplemented by the investigations and reports of a visiting officer acting under a State appointment, and so entirely independent of county authorities, who should be empowered and required to examine, not only the sanitary condition of the jails and poor houses, but their management in detail, and report thereupon. The suggestions of such an officer would be of great value to those county authorities who are anxious, as most of them are, to do the best they can towards their paupers and criminals in proportion to the financial ability of the county. His wise experience gained in comparing the methods pursued in different localities would be drawn upon in such consultations and would be recorded year by year in reports, and so would be the cause, in many cases, of improvements by which the best results could be attained in the most economical way. On the other hand, those County Commissioners and others who are disposed to neglect their proper duties in this respect might be reached by the publication of their shortcomings in the reports and by the consequent pressure of public opinion. Abuses cannot thrive before the eyes of the whole people.

What has been said has regard even to those counties whose superintendents of health, as official sanitary inspectors of the jails and poor houses, report to the State Board of Health, and it applies with peculiar force to those from which no reports of any kind are received. Only 58 counties out of 96 have thus far organized boards of health and elected superintendents. In the remaining 38 nothing is publicly known of the condition of the jails and poor houses or of the treatment of the inmates. In some of them the state of affairs may be no worse than in the 58. In the absence of information we can only say that we do not know. In many of them, however, we do know that there is gross neglect. Two instances may be mentioned as showing what is possible under the existing system. They are given on the best authority and may be accepted without reserve. In one county a lunatic was confined in a small cell for months with a lack of attention that would have been disgraceful in the case of a hog in a pen. This human being was allowed to become plastered over from head to foot with his own excrement, and a more loathsome, miserable creature it is not possible to imagine. And this was not one hundred years ago, nor fifty years ago, but one.

The second case was almost as recent and also a lunatic. A man whose misfortune it was to have lost his reason and to have fallen into the hands of the authorities of another of the counties of our civilized State in this closing part of the nineteenth century of christendom, was confined for more than two years in a box-like structure, so small that the sitting posture was the only one permitted. In all that time he could neither stand nor lie, for he never once left his box. In God's mercy he at last reached one of our asylums, but as a cramped skeleton—a wreck pitiful to see. His joints had become fixed from want of use, and he might as well have been still in his living grave. It is a pleasure to state, however, that the anchylosis proved to be fibrous, and that with careful attention and the lapse of time, though his mind is still diseased, his legs have again become useful to him, and he is, comparatively speaking, in ruddy health.

Let us suppose, in the name of humanity, that such cases as these are the result of ignorance, but whether of ignorance or of barbarous indifference, in the name of God they should be impossible.

The essential point is that State supervision over the local authorities, advisory in character, it may be, but supervision of some sort is a necessity. It is incredible that such abuses as those cited could exist under such a system of inspection as the one under review.

There are many other directions in which the work of a State Board of Charities is greatly needed, for example, the study of the question of what can be and ought to be done for our idiots, a class sadly in need of attention and wholly neglected by the State. But time will not permit a more thorough discussion of the subject, and I will not longer abuse your patience.

When we come to consider how far a practicable scheme can be embodied in legislation many difficulties arise. A Board of Charities, pure and simple, commanded by the Constitution, though it be, has been tried and failed. The time was not ripe for it. It would seem that the most feasible plan would be the one suggested some years ago by Dr. Thomas F. Wood, of vesting the duties of the Board of Health and the Board of Charities in a single board, but the details would have to be worked out with care and with the contributions of many minds.

A PLEA FOR THE INEBRIATE.

By E. J. KEMPF, M.D., Jasper, Indiana.

I.

THE INEBRIATE.

No License or Free Whiskey and Prohibition amount to the same thing.

Free Whiskey allows every one, who feels so inclined, to drink as much alcoholic liquor as he wishes. Those who know that alcohol is a poison, and must be used moderately, will refrain from using it to excess.

Prohibition demands that no one use a drop of intoxicating liquor. Those who can control themselves do not need prohibition to protect them. Those who wish to drink will do so in a secret manner, violating the law every time they do so. The reason of this is, you cannot legislate the people to become temperate. They must be educated to know that alcohol is an injurious poison. They can be educated to become temperate by means of the press, the pulpit, the lecture, the school and wise laws to regulate the liquor traffic.

At the present time, and under the existing circumstances, the free-whiskeyites and the prohibitionists should compromise the matter by adopting High License. High License will help pay the expenses to keep the liquor traffic within proper bounds.

Laws can be passed to make the saloon-keeper close his saloon on Sundays, legal holidays, and at an early hour at night. The card-table, the dice-box, and other devices to make men play for drinks, should be banished from the saloon by stringent laws. No tables or chairs or benches should be allowed in a saloon or in an adjoining room.

If this is done people will comprehend that every one concedes them the right to make use of their liberty, but that they must not abuse it.

Laws can be passed to fine the drunken man and to prevent the saloonist from selling alcoholic liquor to the habitual drunkard.

The writer knows that prohibition, if it could be adopted, and if all people were to obey its demands, would be the right thing. But we must take things as they are, and not as they ought to be. And it is certain that prohibition is a failure at the present time.

The writer will assume that he is in the right on the grounds that science concedes that whiskey, beer and wine, if used properly, is beneficial. I cannot define "proper use." It may mean daily use for one person, suffering from disease or convalescent from a sickness, or weakened by age, whilst it may mean "refrain from using it at all until you need it," for a great many other persons. It may mean drink to-day a glass or two at a banquet, a wedding or a public dinner, and abstain at all other times.

Were alcohol used properly by all, no one but a crank would say or write a word against it. But there is the rule. It is not used properly by a great many persons, simply because they cannot govern themselves. These persons are called habitual drunkards or inebriates, and it is in their behalf that I write this brief article, discussing what can and should be done for them.

My native village contains a great many saloons, and everybody drinks. The majority of the people are temperate, and a great many of them would vote for prohibition if they thought it could be enforced. Of the minority, a great many drink more than they should, because they drink habitually. A few drink to excess, and are habitual drunkards. I met one of these sometime ago, and he asked me to loan him a quarter. The man, still a young man, was a perfect sot. He had once been something else. His clothes were ragged and torn, his face was unwashed, his hair was unkempt, his eyes were watery and lusterless, his hands trembled, his legs seemed shaky and his bloated face had a hungry, anxious look. I gave him the quarter without a word. Noticing that he entered a saloon, I followed him through a side-door, and hid myself so that I could see him without being seen.

He walked up to the counter and asked for whiskey, tossing the quarter on the counter at the same time. This meant that he knew his credit, like his character, was gone. The bar-keeper handed him a bottle and a whiskey-glass. The inebriate poured the glass full to the brim with unsteady hand, and then poured the fiery liquid down his throat.

The fellow's tongue seemed to have been loosened by some invisible power, and, throwing his head back and straightening up, he commenced to make a speech, as he called it: "I love but one thing on earth, and that is alcohol. Alcohol is my God. The slave can run away from his master, the prisoner can escape from his keeper, the murderer can cheat the gallows, but for me there is no escape. King Alcohol needs no trained bloodhounds to keep me from running away from him. I belong to my King, body and soul. The aim of my life is how to obtain liquor. I beg it from the people, borrow it from my comrades, steal it from the saloon-keeper and drain it from the beer-kegs on the curb. I cannot resist the desire to become intoxicated. I care not for the liquor itself, but for its effect I crave. I am an inebriate. I became a drunkard not through choice, but simply because I could not help it. I am the victim of an insane propensity. In other words, I am an irresponsible criminal. Society and custom is responsible for my dreadful condition. Reputable men sold me alcohol, and the State has given me the right to make a drunkard of myself, because my personal liberty entitled me to be that. The drinking habit has grown on me until I and the habit are one. I have sworn off a thousand times, only to fall again. I have signed pledges innumerable, only to break them again. I made resolution never to touch another drop, but at the first temptation I went down like corn before a storm. I have gone home late at night gnashing my teeth together in rage at so easily yielding to the tempter. I have grovelled on the floor of the room at night and begged the good God to help me or to let me die. I was too much of a coward to commit suicide, and my wife and children stood before me as a threatening ghost to live and reform—but I could not. With tears in my eyes I have promised my wife to do better and sealed the promise with a kiss on her untainted lips, but, like a miserable cur, I forgot my promise the first time I met a friend who insisted that I could drink moderately if I wished. I have been arrested, fined and imprisoned for being drunk, but it did me no good, and only made me desperate. I became worse because no one seemed to help me in the right way. And now I have gone to the dogs. My wife has cast me off, my children will have nothing to do with me, my former friends know me no more, and there is but one hope left for me, and that is to die. Good-bye, gentlemen."

That night this inebriate was found hanging to a rope in an outhouse. His soul had gone to his God. He certainly met with more mercy there than his fellow-men, in their ignorance of his true condition, dealt out to him.

This man was sick. His disease is called abulia, or degenerated will-power. The will is a determining force, the complex result of inherited peculiarities and acquired experiences. The will has no special centre, its activity depends upon that of the whole brain. Anything that impairs the activity of any part of the brain enfeebles the will. Naturally abulia occurs in persons whose nervous system has degenerated. Predisposing causes are inherited from a dissipated parent or from a degenerated family. The causes that excite the enfeebled will-power are sexual excess, emotional strain and drugs habitually used to excess. Alcohol is the principal drug thus used, because it is easily gotten, and also because the State and popular custom sanction its use. It is safe to say, then, that abulia is a mental deterioration, showing itself in an enfeebled will-power caused by the excesses. It is destructive in its results not only to the sufferer, but also to his offspring.

There is another type of inebriety which goes under the type of ebriosity, and by which is understood the condition of continual half-way intoxication. This, necessarily, occurs only among saloon-keepers and those engaged in the manufacture or sale of alcoholic liquor, having access at all times to alcoholic drinks. Beer-wagon-drivers are a type of this condition, a great many being able to drink a hundred or more glasses of beer a day and still tend to their work. This is a very destructive form of drunkenness and may be called incurable. It is a condition most pitiable.

Dipsomania is that form of the drinking habit which manifests itself in periodical drinking to the verge of madness. It is a mental alienation due to a morbid condition of the nervous structures, generally hereditary. It may commence suddenly as a consequence of some severe shock to the brain. The disease may also have its origin in the social habits of the patients, who from a simple convivial drunkard may become transformed into a regular inebriate. There must, however, be a predisposition to inebriety in order to effect its evolution. Healthy men without neurotic predispositions may drink voluntarily in moderation without thus breaking down, but let them remember that they are laying the corner-stone of a dipsomania in the person of a future son or daughter.

Dipsomania is a disease of the cerebral nervous centres analogous to recurring neuroses, such as epilepsy, etc. It is an attack of uncontrollable drunkenness, always kept up until the stomach refuses longer to tolerate the alcoholic drinks. Then the attack stops as suddenly as it came, and the sufferer recovers his usual health and spirits and enters into his business in a way as if nothing had happened. As a general thing these attacks recur at intervals of from one to six months, and the end is—a suicide, a maniac or a death from a renal, a gastric or a hepatic disease. Such people are the despair of their friends, the torment or ruin of their families and the scandal of their community. Seventy times seven they fall and are lovingly raised up. They express contrition, they make firm promises of amendment, but you can rely on but one thing, and that is, when the time comes the patient will become drunk, and drunk unto madness.

These are the three types of inebriety. I deal not with theories, but with facts. I do not present a temperance sermon. I leave that to those who make a specialty of soul-doctoring. My business is with the inebriate, and my address is to intelligent men who are ever willing to listen to the truth if any good may come therefrom.

The laws of the State and the customs of Society permit the drunkard to be mad; and these laws and these customs concede the right to become a drunkard to every citizen, because the State says that personal liberty should not be interfered with. On the other hand, the laws of the State direct that the drunkard be fined and imprisoned for being what his personal liberty entitles him to be. It is, therefore, logical to say that, according to the laws of the State, a man has a perfect right to become a drunkard, but that after he is a drunkard he has no right at all to be one.

Man is by nature very inhuman to man. He forces his brother into slavery, he murders him on the battlefield, he seduces his innocent sister and forces her into the brothel, he keeps his brother down by preventing his becoming educated to know how to improve his lot and his health, and, above all, he sells his brother alcohol, which is the most terrible poison in its effects on earth, and he tells his brother lies—that whiskey is good for him, and that his personal liberty entitles him to use it.

Is this right?

Science, which recognizes no laws built on prejudices and mistaken ideas, and which treats all customs and usages with utter contempt, claims that no man has a right to become a drunkard; that it has demonstrated that inebriety is a disease and a grave one at that; that the inebriate does not exercise his free-will to remain or to be a drunkard, for the simple reason that he no longer has a free will to exercise, but that the drunkard is the involuntary slave of an uncontrollable desire.

Science further claims that the drunkard may have never exercised his free will in matter. He may not be a drunkard from choice, but he may have inherited a predisposition to become a drunkard, and a necessity, opportunity and circumstances may have made him what he is—an habitual drunkard.

The State considers "becoming a drunkard" a personal right, and "being a drunkard a crime."

Science holds "becoming a drunkard" to be a sin, and "being a drunkard" a disease. To science there is no such thing as crime. Every so-called crime is the deed of a diseased mind or of a diseased body.

Habitual drunkenness, or inebriety, is, therefore, a disease brought on by the excessive use of alcoholic drinks, though this use may or may not have been continual, and the victim is an involuntary slave of an insane propensity. He knows what is right, but cannot choose it; and he knows what is wrong, but cannot shun it. There is no loss of the power to judge of right and wrong, nor any disturbances as to facts, except in the latter stages, but the mind is powerless to control conduct according to knowledge. This state which the drunkard is in may be called criminal irresponsibility.

II.

WHAT CAN THE INEBRIATE DO FOR HIMSELF?

As to chronic cases of drunkenness, a reformation under the existing circumstances is improbable and very nearly impossible. The temptations are too great and the opportunities are too many, and though the drunkard may have a desire to reform or to cure himself, his will-power is enfeebled and he cannot resist the demands of his habit unless he be removed from temptation and it be made absolutely impossible for him to get a drink. The drunkard is an object of contempt and disgust, as a drunkard, and an object of pity and danger as a man, as a father, as a son, as a brother and as a friend. He is pitied by all good men, but they are powerless to help him. He cannot help himself. He cannot reform whilst he is in the midst of temptation. The licensed liquor house or the unlicensed dens are easy of access, and indiscreet friends are not wanting to tempt him to go into such places and to take but one drink, which is the spark that lights the fire that nothing can quench.

Dr. Kerr says: "The struggle of the intemperate for freedom is a combat more terrible than any other fight on earth." It is a hopeless fight if unassisted by good men.

Dr. Parrish says: "The temptation with which they are tempted is within. It circles in the stream that gives them life. It burns in every nerve, and quivers in every muscle, and throbs in every fibre."

Dr. O'Dea says: "The drunkard says, 'I can no longer resist temptation. If a bottle of brandy stood at one hand and the pit of hell at the other, and I were convinced that I would be pushed in as soon as I took a glass, I could not refrain.'" This is the language of despair, uttered by a man who has struggled until he discovered that he was fighting an utterly hopeless fight.

The drunkard, therefore, can do nothing for himself.

Dr. Davis says: "All experience has shown that little progress or none can be made toward the permanent recovery of a dipsomaniac so long as his business places him in more or less contact with alcoholic drinks, or in frequent association with drinking comrades."

Dr. Lyman says: "For the permanent cure of inebriety nothing avails but special treatment in hospitals provided for this class of patients."

Dr. Carpenter says: "However responsible he may have been for bringing the disease on himself, his responsibility ceases as soon as he comes under the influence of the malady. I can see no distinction between this form of disease and any other which has been induced by the habits or acts of the individual. The only chance of a cure or alleviation is from attention to the health and abstinence from intoxicating liquors. Neither can he be cured so long as the patient is at large, and no amendment can be depended on unless he has undergone a long course of discipline and probation. Considering, then, that the patient is irresponsible and dangerous to himself and others, and that his disease can be treated only in an asylum, it is not only merciful to him and to his relatives, but necessary for the security of the public, that he be deprived of the liberty which he abuses and perverts, and that he should be prevented from committing crimes instead of being punished after he has perpetrated them."

Dr. Davis says: "Enforced seclusion in a proper asylum, with no possibility of obtaining any kind of alcoholic liquor, but where good air, good food, kind treatment and some suitable employment can be furnished on the same principle that applies to the treatment of insane persons will save them from early destruction."

Another authority ("International Cyclopedia") says: "It is undoubtedly the duty of a good and wise government to provide for such cases, when it is so well known that the consequences of unrestrained action may be so serious to the individual chiefly concerned; when families are so often thereby plunged into deep distress or absolute ruin; and when the amenity of society is so frequently outraged by a disflagrant crime. It is certainly an overstrained delicacy in a Legislature to shirk interference with a class of cases which lead to so much private misery and public expenditure, as the records of our courts of law, prisons, poor houses and lunatic asylums can amply attest. But considering the case of the dipsomaniac from another point of view, a facility by law to control, would confer on himself an unspeakable benefit. It would thus afford him his only chance of cure and of restoration to society, instead of permitting him to go on to wreck and ruin. Indeed, the neglect of law to provide such a check and remedy seems inconsistent, unjust and inhuman, when we consider that, while it permits the insensate drunkard to endanger his life, to waste his property and deprive his family of that which they are justly entitled to expect at his hands during life, it holds him responsible for any criminal act he may commit."

Tell me, now, is not the condition of the drunkard a deplorable one? In fact, is it not a blot on civilization? And would you say nothing should be done for the unfortunate inebriate, who has no chance whatever to reform under the existing circumstances? Will you not admit that something should be done to prevent the increase of drunkenness by wise laws to regulate the sale of alcoholic beverages, and that something must be done to diminish what there is of drunkenness, by taking care of the inebriates in a proper manner, so that they can become cured of their malady, and their friends be partly relieved of the burden of coming into daily contact with the habitual drunkard?

These are questions that can have but one answer. Yes, society should be protected against the drunkard, who is made by consent of the State in accord with public opinion And the drunkard should be protected against himself and against those who are licensed to sell him the wherewithal to remain a drunkard.

III.

SHOULD THE STATE TAKE CARE OF THE INEBRIATES?

The State should provide an Asylum for the treatment of its inebriates. Without such an institution the victim of inebriety must find a drunkard's grave in order to find relief. With this institution hundreds can be saved and returned to their friends as useful citizens, whereas, under the existing circumstances, they crowd our insane asylums, inundate our courts, fill our prisons and perish in our streets.

The only way in which the State, under the existing circumstances, can provide a protection for the drunkard, so that he may be cured of his malady, is by erecting and maintaining homes for inebriates.

The money derived from the licenses issued and from the fines collected from those who transgress the laws in regard to the sale and use of alcoholic beverages, should be used for erecting a home for inebriates.

The pauper inebriate should receive treatment free, and the inebriate who has property should be made to pay a reasonable recompense for the good he receives.

The homes, after they were once in good working order, could be made self-sustaining under efficient management. Indeed, the inmates should be employed in labor in order to learn discipline and to improve their bodily health. They should also be afforded recreation and amusement to prevent discontentment with the situation in which they are placed, and to convince them that there are other ways of enjoying life besides sitting in a saloon and becoming drunk.

These houses should be erected in the country, away from temptation. Proper rules and regulations should govern the inmates as well as those in attendance. The Superintendent, of course, should be a medical man, appointed solely on account of his qualifications and administrative ability, regardless of politics. A Board of Trustees should have control of the institution. One of these should be the President of the Board of Health. The salaries, of course, of these officers should be sufficient to enable them to turn their entire attention to the good of the institution.

The sending of confirmed drunkards, alcoholic inebriates, *morphine inebriates*, etc., to these homes should be made compulsory by proper laws. Their personal property and estates, if they have any, should be put into the hands of a guardian, who must give bond. The inebriate should pay a proper fee for the treatment he receives, if he is able to do so.

Voluntary entering into the homes by confirmed inebriates should be encouraged, but only allowed after a proper examination by two physicians, who should certify as to the condition of the patient. A complete history of the case would also help the medical attendant in treating the patient.

The fee exacted from the inebriate, if he is able to pay any, should be fixed upon in each in-tance by the Board of Trustees, who should have rules to go by based upon experiences of similar institutions.

The friends should not be allowed any control over the patient after he becomes an inmate of the home to which, according to circumstances, he is assigned. The inebriate must remain at the home at least a year, when the medical superintendent, under the advisement of the Board of Trustees, may let out the patient on parole, until he has proven himself able to govern himself.

The drunkard who is out on trial should be considered as belonging to the institution until he has kept sober for the time of one year. Should he show signs of the return of his malady before the year is up, he should immediately be brought back to the home for further treatment. It is presumed that the person who can keep sober one year is no longer to be considered an habitual drunkard.

I have made this plea in behalf of the unfortunate inebriate, not with the view of gaining a little cheap notoriety, but because I realize the terrible condition he is in and the hopelessness of his case unless he receives proper treatment in an institution designed for the treatment of inebriates. He can be saved in no other way.

Temperance revivals, etc., are good in their way, but they cannot help the drunkard. Religion cannot save a man whose mind is so far degenerated that he cannot control his actions or his appetite.

I have pointed out the proper way to take hold of inebriism; it is not original with me, but is based on the labor and studies of abler men, such as Drs. Benjamin Rush, J. E. Turner, Norman Kerr, Joseph Parrish, T. D. Crothers, N. S. Davis, T. Wright, and many others.

SELECTED PAPERS.

ON THE INFLUENCE OF PERMANGANATE OF POTASSIUM ON MENSTRUATION.

By W. Stephenson, M.D., Professor of Midwifery in the University of Aberdeen.

In a paper on the Treatment of Amenorrhœa by Manganese, published in 1883, Drs. Ringer and Murrell drew attention to what promised to be a rich vein of ore, well worthy of the attention of specialists. Since that time, however, the work remains pretty much as they left it. A few cases have now and again been recorded confirmatory of the opinions advanced, but contrary views have also been expressed, notably by Dr. Braithwaite, of Leeds. He says he "has given the remedy in not less than forty suitable cases. Any benefit from its use was very seldom met with." My own first impressions, formed from casual observations, were likewise unfavorable. This led me to investigate the subject systematically, with the view of ascertaining the truth. The result has been to show that Drs. Ringer and Murrell have but broken the surface ground, and that this is not a bogus remedy floated on a too credulous public.

The present investigation has extended over a period of three years. The cases have all been under my personal care, and the large majority of them have been seen in the consulting-room; in all, notes were taken at each visit. As is the usual experience, many of the cases in which the remedy was prescribed have been found imperfect, but I have been able to collect 105 cases in which reliable results were obtained.

In the present series the permanganate of potassium alone has been used. It was prescribed in the form of pill, containing 2 grs. of the salt with sufficient kaolin ointment; one pill three times a day after meals; in a few cases 12 grs. a day were taken. Many of the patients continued to take the pills regularly for two and three months. In only three cases did they complain of any pain after the medicine, and in these reducing the number of pills per day or the dose in each case was sufficient. My experience, therefore, is different from that of Dr. Döering, of America, who found that "the adminstration of the drug in doses large enough to be effective is accompanied by severe pain, which frequently necessitates a discontinuance of the remedy, and hence impairs its value as an emmenagogue." This result is explained by the mode of administration. He recommends it to be given in "capsules, taken midway between meals, and followed by large draughts of some pure mineral water." The drug is thus thrown rapidly in solution on the stomach, whereas the pills undergo very slow disintegration.

Amenorrhœa is the test which has mainly been used for the action of the permanganate, and, therefore, naturally leads to a condition which tends to right itself. Unfortunately, it is deceptive. The greater part of the evidence adduced is, nevertheless, composed of such cases. The authors of the paper first referred to state: "Our most striking results have been obtained in young women between the ages of 18 and 25, who from some accidental or trivial cause, such as catching cold or getting wet, have missed once or twice after having been regular."

Evidence of this character must be accepted with caution; and did the belief in the action of the permanganate rest on such alone, it would require a very large number of successive cases (not cases taken here and there) to eliminate the uncertainty that is inseparable from the affection. Two of my cases were instructive in this respect, for they both menstruated before they had taken the pills.

In so-called emmenagogue remedies I have no belief, and that such is not the action of permanganate of potassium is evident, for I have found it as serviceable in restraining the menstrual flow when in excess as in promoting its recurrence when suppressed.

Of the beneficial effect of the drug in amenorrhœa I have no doubt, but this opinion is not based on the result of the treatment of such cases alone. Corroborative tests can be used. First, where menstruation has not been suppressed, but the intervals between the periods have been irregular, does the permanganate promote irregularity? Secondly, where the periods have been regular, but the quantity has been scanty, does the permanganate increase the amount of the discharge? And, thirdly, has the remedy any influence in modifying the amount of suffering experienced at the periods?

An analysis of the 105 cases gives the following results on these points: Of amenorrhœa, where menstruation had previously been fully established, thore are 22 cases. Of these the flow was reëstablished in 12 cases, and no such effect in 8; in 2 the remedy acted well at first, but on a subsequent amenorrhœa it failed. Of primitive amenorrhœa, or where menstruation had been imperfectly established, there are 10 cases; in 6 good results were obtained, and in 4 none. In 7 cases the interval was too long, but otherwise menstruation was natural; in 5 of these there was marked improvement, in 2 the character remained the same. In 21 cases menstruation was scanty in amount, and two long between the periods; in 11 there were good results, in 10 no improvement. In 18 cases there was very marked improvement in the amount of pelvic pains, and frequently the patients stated that they felt much stronger during the periods, and were not "so pulled down."

In estimating the value of these general results it must be remembered that in the inquiry the permanganate of potassium was prescribed indiscriminately, with the view of testing its action; the failures are, therefore, more numerous than they otherwise would have been had cases deemed most suitable been selected. Thus a number of them were cases of chlorosis, where iron should first have been employed or given in conjunction with the manganese.

Together with the above tests, there is another which should be taken along with them, that is the marked action of the remedy in checking leucorrhœa. This effect I observed early in the investigation, and I find Dr. Ringer also mentions it. The action is very reliable, and generally immediate, but in some cases it is obtained only after the first menstrual period; in two cases only there was no improvement in the leucorrhœa, and as both were unmarried no examination was made.

Whilst treating a case of long-standing amenorrhœa, I found that without menstruation being restored, she had been relieved of severe headaches from which she had suffered for four years. This directed my attention to the subject of menstrual headaches. Since that time I find amongst my notes 29 cases in which headaches were a a prominent symptom; in only 4 of these was no relief obtained.

There is one striking case where the patient, aged 35, had suffered from headaches all her menstrual life. They occurred on the first, and occasionally the last, day of each period, but for three years they have returned every fortnight, at the mid-period. Since taking the permanganate (now nine months) she has not had a headache.

The headache of the menstrual period was not always removed, but generally greatly moderated. The best results were obtained in cases where the headaches had begun to return in the intervals, once a fortnight, then weekly, and, at times, two or three times a week.

In a similar manner I was gradually led to the fact that the permanganate has a marked influence in relieving ovarian pain. Amongst the notes there are 22 cases in which the ovarian spot pain was a special symptom. They were all more or less relieved, some in a very marked manner. I now prescribe the remedy in all cases of functional ovarian pain with as much confidence as I do in leucorrhœa. The relief is not always complete or permanent, but there is ample proof that the drug exerts a beneficial influence over this very intractable symptom.

As the subject thus became widened, another point demanded attention. Has the permanganate any influence over menstruation when it is in excess either in time or in quantity? I have notes of 27 cases where this condition was present, and in 2 only was there no improvement. The beneficial effect in this respect is even more marked and reliable than in the opposite condition of suppressed or scanty menstruation. There is here less likelihood of wrongly attributing the improvement to the medicines, and some of the cases leave no room to doubt the action of the remedy. Thus one patient, aged 44, had for nine months menstruated every fortnight, and any excitement would bring it on. For the first four days of a period the discharge was very free, and thereafter moderate for other six days, making ten in all. The first menstrual period came on a week after beginning the medicine, with but little improvement; the second menstruation, at twenty-eight days' interval, quantity less, but still free, lasted five days, instead of ten; third menstruation, twenty-six days' interval, lasted six days, "not so pulled down," general health improved; fourth menstruation, twenty-eight days; fifth menstruation, twenty-four days, quantity normal. The effect is thus observable both as to time and quantity.

Each of the above points merits and would require a separate paper for its consideration. Time at our disposal permits general statements of results only. It is, however, evident that in the permanganate of potassium we have a remedy which has a considerable influence upon the function of menstruation when that function is deranged. In the matter of time, it tends to promote the normal periodicity both when the periods are too long and when too soon. It aids in restoring the menstrual flow when suppressed, to increase it when scanty, and to moderate it when in excess. It relieves much of the menstrual suffering, has a direct influence on some forms of ovarian pain and the headaches of menstrual origin. It has a remarkable influence in checking leucorrhœa.

The questions natural arise, then, how does the permanganate act, and what are the cases suitable for its administration? It might be argued that manganese has, as its emmenagogue action implies, a direct influence on the generative organs, as ergot has on the uterus, and digitalis on the heart; but the evidence at our disposal does not warrant any such conclusion. As yet the action of the drug has been studied only in relation to disease, and we have no evidence to prove its physiological effect in health. A study of the cases seems to point to the view that its beneficial action is due to its correcting the *constitutional* states which give rise to menstrual derangements, rather than to any specific effect on the uterine structures. It might equally well be stated that lime juice has a direct action on the gums because it removes the scorbutic lesions of these parts.

The action of manganese has generally been supposed to be similar to that of iron, and accordingly at one time it was given in chlorosis and anæmia, but "failed to be of service." It does not act on the blood, its action is totally different from iron, but yet I have found it of decided use in chlorosis for its effect on menstruation, and of late I have added the carbonate of manganese to Bland's pill.

The study of my cases, from a constitutional point of view, apart from its action on menstruation, tends to indicate that manganese acts on the vasomotor system, improving and giving tone to the circulation. This is well seen in a constitutional state met with in young girls. They are not anæmic, rather the reverse, full blooded, with languid circulation; the chief characteristic is that the face and extremities are hoven, with a tendency to blueness; there is a great loss of energy and a disposition to drowsiness in the daytime. Under the permanganate this constitutional state steadily improves. At first there may be a loss of weight, the color becomes clearer, the fulness of the tissues subsides, and the energy returns. The loss of weight I have several times observed in patients taking the permanganate is not due, in my opinion, to increased combustion of the tissues, but to the diminution of the watery elements of the blood and tissues. The condition is not œdema, but a vascular fulness.

Much of the relief to menstrual suffering afforded by the permanganate is doubtless due to the improvement in vascular action. Several of the cases, which time will not permit to quote, clearly indicate that some forms of menstrual pain are caused by vascular distention and increased venous blood-pressure. It is in these cases the remedy may be relied upon to afford relief, and so improve the system that the suffering does not return at subsequent periods. The influence of the remedy on leucorrhœa is likewise, in all probability, due to the improvement in the circulation. The effect in affording relief to the ovarian pain admits of the same explanation.

The vascular changes associated with menstruation are, however, not merely local, but are truly systemic. The relief obtained in headaches can therefore be also understood by an improvement in the general circulation. But, as we have seen, the remedy influences not only the amount of the discharge, but also the time, by restoring the normal periodicity. This points to an influence on the nervous system. Laschkewitsch has shown that in toxic doses "manganese causes general paralysis, at the same time the heart's action ceases, owing to the direct effect of the drug on the motor apparatus." From these pharmacological experiments, together with the results of clinical observation, we may confidently infer that the direct action of the remedy is on the vasomotor centres, and from the marked influence on menstruation it is probable that it stimulates especially the centres regulating the generative system.--*British Medical Journal.*

THE EARLY DIAGNOSIS OF EXTRA-UTERINE PREGNANCY.

By J. C. Reeve, M.D., of Dayton, Ohio.

No subject in gynecology, if, indeed, in any department of medicine, has made such rapid and substantial progress within the last decade, as extra-uterine pregnancy. Light is finally breaking in upon one of the most intricate and complicated of pathological processes, and by the extension of physiological knowledge, and by clinical observation, that which was an unsolvable riddle to former generations is becoming fully understood. The cause of humanity has gained equally with science. One of the most serious calamities which can happen to woman in connection with the transmission of life, one which is overwhelming in its effects and appalling in its sudden mortality, is at last deprived of much of its danger by the resources of therapeutics and the boldness of modern surgery.

The part which this country has taken in the advance of this subject is cause of pride and congratulation. The clear recognition of the necessity of laparotomy for rupture of the cyst, by Stephen Rogers, of New York, marks an epoch in the history of the subject. Others had suggested this measure before, but he, more clearly and more vehemently, urged the necessity of this operation upon the profession nearly twenty years before it was executed. Parry's treatise, published in 1876, is another landmark. This gives the scattered knowledge of the times, admirably collected, presented and commented upon. The scholarship, the judgment, the critical acumen of this little volume have won the highest encomiums from foreign writers, who have borne testimony to the great loss which medical science sustained by the author's early death. More recently, the application of electricity for causing the death of the fœtus, and thus by harmless means rescuing the patient from imminent peril and saving her from the dangers of laparotomy, has given renewed life to the study of the subject. This measure had in this country its earliest successes, and cures by it have since been so numerous that it has conquered for itself a position as a safe and reliable remedy, and as one of the glories of American gynecology.

I fully recognize the fact that a paper presented to an assemblage of practitioners should be based largely upon personal experience, and that doctrine should be illustrated, or theory enforced, by the recital of actual observations. I deplore, therefore, that I have not clinical experience to lay before you. Nevertheless, it is justifiable to present such a paper when the subject is one upon which but very few men have had a great deal of practical experience. Mr. Lawson Tait has had to do, ante- and post-mortem, with about seventy-five cases, yet he never had the opportunity of making an early diagnosis. Dr. Thomas has seen over thirty cases. These are the largest experiences of the world. Winckel, of Munich, all of his life at the head of a large obstetrical and gynecological clinic, has met with but thirteen cases. The vast majority of cases of extra-urerine pregnancy have been reported by individuals who never saw one before, or have seen but a few cases. We are with this subject, then, exactly as we are with deaths from anæsthetics. But few men have had the misfortune to see more than one; no one has seen many of them. Still, from a careful study of the single cases, as reported by individuals, much of value has been learned as to the different modes in which the fatal accident occurs, and as to the best means of avoiding it. By such a study of isolated cases of extra-uterine pregnancy I attempt to present one portion of the subject. The whole subject is far too wide for complete consideration, and I limit myself to early diagnosis. My original intention was to take each symptom and note its presence or absence in each reported case, and then tabulate the results. A paper upon this plan would manifestly be complex and extensive, and probably not as useful as one in which the results of a careful study of cases are clearly presented, each symptom which may be present being considered in regular order. Such a paper I have attempted to prepare, impelled by the fact that the signs and symptoms of abnormal gestation are not so fully presented in the text-books as they should be. From the nature of things the majority of cases will fall first into the hands of the general practitioner, and he should be acquainted with the points of diagnosis that relief may be afforded the patient in due season.

Cases of extra-uterine pregnancy may be classified as follows:

1. A very small number present no well-marked symptoms, and go on to full term; labor sets in, and only then the true state of affairs is discovered.

2. A somewhat larger, but still a relatively small number, are first

announced by the symptoms which speedily overwhelm the patient. Rupture of the cyst occurs, and death, by shock and hemorrhage, speedily ends the scene.

3. A large majority of cases, in which marked symptoms are present from an early period. Of these symptoms no single one may be pathognomonic, yet by a concurrence of several of them at once, or by several appearing in succession, a diagnosis may generally be made. It is to these symptoms that I beg leave to direct your attention.

First in order comes the probable existence of a pregnancy. The reflex signs of this condition are present; on the part of the digestive system, depraved or changed appetite, nausea, vomiting, salivation. The breast and nipples show the usual changes. As a general rule, the patient believes herself to be pregnant. This has been the case so frequently that some authorities hold it to be essential. Bernutz and Goupil found this feature absent but four times. When the patient has already had children, her testimony is, of course, more valuable. I know of but one authority who discredits the value of this point in the history of a case. Mr. Tait, in his late work on ectopic gestation, expresses the opinion that no reliance can be placed upon it. Still, at a later period, in making a diagnosis of ruptured cyst, he lays due stress upon the probable existence of a pregnancy when the overwhelming accident occurred.

There are two points to be noted in regard to the pregnancy. 1. In extra-uterine cases a considerable period of barrenness has preceded its occurrence so frequently as to have attracted especial attention. The existence of a desquamative salpingitis, whereby the tubes are deprived of their epithelial lining and brought to a condition similar to that of the interior of the uterus, is maintained by Mr. Tait to be the leading etiological factor in these cases. The explanation seems reasonable and far more probable than that of an obstruction of the tubes. If, then, a patient is pregnant some years after the birth of a child, or becomes so only after several years of married life, the fact should receive due consideration. 2. The ordinary symptoms of pregnancy are likely to be exaggerated, especially those of the pelvis. In the language of Parry, "the pregnancy is a stormy one."

Next in order comes derangement of menstruation. There may be the amenorrhœa which belongs to the ordinary pregnancy, but much more frequently the flow is irregular, and it may be excessive, and even continuous. Recurring gushes of blood occur, and, with pelvic pains, often lead both patient and practitioner to believe that an abortion is taking place. There will be often no further doubt upon this point should the decidua be expelled *en masse;* it is taken for a "mole" or "false conception," and looked upon as the termination of a miscarriage.

Examination of the pelvic region reveals, in many cases, great tenderness of one or the other iliac region or of the hypogastrium; there may be so much as to prevent a satisfactory investigation. Great pain at some point of this region may be complained of, and the pain radiates to the loins and down one or both thighs. There may be a febrile condition present and all the evidences of successive attacks of pelvic peritonitis.

A vaginal examination would of necessity follow such symptoms. In a case of extra-uterine pregnancy such an examination shows certain changes in the uterus and the presence of a tumor. The uterus is enlarged, in the earlier period, in proportion to the duration of the pregnancy.

It is displaced; the gestation cyst has pushed it to one side or the other, or forward so that the cervix is found close to the pubic arch. The os is patulous, the finger easily enters it. The uterus is empty. If amenorrhœa is present, the practitioner would, of course, hesitate to ascertain this by the passage of the sound; but when metorrhagia exists, or the decidua has been expelled, there need be no hesitation. The tumor to be felt *per vaginam* presents some well-marked features which serve to differentiate it from anything else generally found in this locality. It is round, smooth, elastic, giving the sensation of a tense cyst, and, as a general rule, exquisitely tender. It is situated in close proximity to the uterus, yet generally can be made out to be independent of this organ. Two features demand especial attention. 1st. The vaginal wall over this cyst or tumor shows active pulsation; vessels can be felt beating by the finger. This feature was recognized long ago by Baudelocque. 2d. The size of this tumor can be observed to change within a comparatively brief period. The growth of a gestation cyst gives an increase in size more regular and rapid than belongs to any condition likely to be confounded with it. Dr. Thomas says it can be noted from week to week.

In addition to more or less of these symptoms, or, possibly, entirely independent of any of them, may come now attacks of severe pain with symptoms of collapse. The patient is found pale, faint, almost or entirely pulseless, with most severe abdominal or pelvic pain. She seems about to die, and the practitioner may be at a loss to account for her condition unless acquainted with the course of this form of gestation. From this collapse the patient may slowly rally, to suffer again in a short period from similar attacks. Different explanations have been given of these severe paroxysms of pain, accompanied by profound depression of the vital powers. They have been attributed to contractions of the walls of the cyst and to uterine contractions. There is no doubt now that they depend upon partial ruptures of the cyst, or of vessels upon its walls, accompanied by a certain amount of hemorrhage. Post-mortem examination of cases in which these symptoms have several times occurred, has revealed a collection of clots, the difference in age of which could be plainly seen. The great practical fact is that a succession of these paroxysms may occur before the final fatal rupture, which they most surely foretell.

In a patient presumably pregnant, having had more than one such attack as this, and having a tumor to be felt *per vaginam*, there could scarcely be a doubt of the existence of extra-uterine pregnancy. But one symptom more could add to the evidence. This is, the expulsion of the decidua. This membrane may be thrown off *en masse*, when it will be readily recognized. In the case under my observation I drew it on my finger like a thimble. It may be discharged piecemeal. The existence of shreds, therefore, in the uterine discharge of a patient presenting any of the symptoms detailed, should awaken suspicion and lead to a microscopic examition. The expulsion of the decidua is a sign of the highest value, and is, by good authority, even held to be pathognomonic.

Two symptoms may seem to have escaped consideration; they are ballotement and the effects of pressure upon the pelvic organs. They belong to a later period than that to which this paper is limited. Ballotement has been observed by Thomas as early, however, as the third month. Only exceptionally can it be elicited at so early a period even by a skilful examiner. It should always be sought for; if present, it makes the diagnosis a matter of absolute certainty.

Pressure symptoms, of course, become more and more pronounced as the case advances in age.

A diagnosis of extra-uterine pregnancy is to be made, then, by a careful study of the history and of the signs and symptoms of the case in hand. No one of the disturbances it occasions or the changes it causes is of very great weight when standing alone; occurring together, however, the value of each increases in a geometrical ratio. There is an order of occurrence, also, dependent upon the period or progress of the pregnancy which should be borne in mind. The value of a coincidence of the symptoms was recognized by Bernutz and Goupil, who taught that it was by an *ensemble* of symptoms that a diagnosis could be made. An interesting illustration of what is here presented was related by Dr. Hanks, of New York, at the meeting of the British Medical Association in 1886. A gentleman, in a consultation, maintained that the case was one of extra-uterine gestation, but agreed to rest the decision upon a microscopic examination of some discharged membrane. This was reported not to be decidua, whereupon he averred his belief that a mistake had been made. A necropsy soon after proved that he was right. It is stated that the microscopic examination was made by a student.

A summing up of our knowledge upon this subject would seem to be that, while in some cases of extra-uterine gestation a diagnosis presents the greatest difficulties, and in a small number it is impossible to make one, in the majority of cases it can be readily done and even more easily and certainly than that of a normal pregnancy. This has been maintained by the very highest authority, both in this country and in Europe. Moreover, a diagnosis can be made at an earlier period than in a normal pregnancy. It has been made as early as the eighth and even as the fifth week.

The symptoms which have been detailed may be classified partly in reference to the order of their occurrence, but especially as to their diagnostic value, as follows:

1. *Suggestive.*—*a.* The general and reflex symptoms of pregnancy, especially if the pregnancy had occurred after a considerable period of barrenness.

b. Disordered menstruation, especially metrorrhagia coincident with symptoms of pregnancy; gushes of blood, accompanied by severe pelvic pains.

c. Severe pain in the pelvis; attacks of pelvic pain followed by tenderness in either iliac region, and other symptoms of pelvic inflammation.

2. *Presumptive.*—*a.* The existence of a tumor; this tumor presenting the characteristics of a tense cyst, sensitive to touch, actively pulsating; steady and regular growth of the tumor to be observed

b. The os uteri patulous, the uterus displaced and empty.

3. *Certain.*—*a.* Paroxysms of violent and overwhelming pain in the pelvis, with general symptoms of collapse.

b. Expulsion of the decidua.

It remains to consider the conditions most likely to be confounded with, or mistaken for, extra-uterine gestation. They are: abscess of broad ligaments; pelvic hematocele: retroversion of gravid uterus; a small fibroid or fibro-cystic tumor of uterus; a small ovarian or dermoid tumor; a parovarian cyst; tubal disease, as pyosalpinx; pregnancy in one horn of a uterus bicornis; intra-uterine pregnancy. It is not necessary to go over these *seriatim.* While each may in some respects closely resemble the disease under consideration, other characteristics, such as rapid growth, paroxysms of severe pain, with a history of probable pregnancy, will serve for a differential diagnosis. Undoubtedly a pregnancy in one horn of a double uterus would present the greatest, if not insuperable, difficulties of diagnosis.

The differentiation of extra- from intra-uterine pregnancy is also to be considered. It is most likely to be needed, however, at a later period than that to which this paper is limited. When the pregnancy approaches term there may be such an unusual thinness of the uterine walls that the child seems to be immediately under the skin, and this condition has caused mistake upon several occasions.

The warrant for presentation of this subject, based upon a study of reported cases rather than upon observations, has already been stated to be the necessity of directing the attention of the profession to the subject and laying before them the means of recognizing it. An awakened attention is the first step to diagnosis. In the case which fell into my hands, I recognized that I had something the like of which I had never seen before, and only realized the truth when the extrusion of the decidua threw a sudden light on the case. And it is interesting to read of cases in which even eminent men were befogged until some new symptoms flashed the truth upon them.

Still more necessary does it seem to present a careful study of this subject, since doubt has been thrown upon the possibility of an early diagnosis in one of the latest publications upon the subject. This book emanates from one whose experience is the largest in the world. That with this large experience the author has never had an opportunity of making a diagnosis before rupture of the cyst is indeed a singular fact, as he himself recognizes. But because he has not had this opportunity, it is unscientific, to say the least, to throw doubt upon what other men have done and reported; and the statement he makes that extra-uterine pregnancy presents no symptoms other than, or different from, those of disease of the tubes, finds its negation and contraction in almost every reported case.

This question of diagnosis has been complicated by that of treatment. To consider the latter is not within the scope of this paper; still, a few words are necessary as to this feature and as to the relation between the one and the other. After rupture of the cyst there is but one remedy—laparotomy. The only hope of the patient lies in prompt and bold surgery. Before rupture, electricity has afforded most excellent results; it can be applied by the general practitioner, and has not shown, so far, any evil effects or consequences. Still, there are those who advocate laparotomy as being the best measure even before rupture. Without questioning either their wisdom or their judgment, truth compels the statement that the advocates of surgical methods have displayed a partisanship which does not belong to science. The perils of laparotomy have been belittled, and the possible injurious effects of electricity have been magnified. Not only these, but the diagnosis of cases in which electricity has been successful has been repeatedly questioned, and the capacity of those who have observed them openly doubted. The position has been taken that because ballotement was not observed, or because fœtal bones were not afterward thrown off, there was no certain diagnosis. Most of the observations of the successful use of electricity were at a period before ballotement could be expected, and before fœtal bones exist. Those who thus doubt are in the position of those who would question a diagnosis of pleurisy with effusion, after recovery of the patient, because no liquid had been presented for inspection. Again, under applications of the galvanic or faradic current the tumor in the vagina has repeatedly been observed to become less tense and less tender, to cease to pulsate, its tenseness diminish and slowly disappear. Coincident with these changes, the sufferings of the patient have abated and she has been restored to health. Simply, the treatment confirmed the diagnosis. How often in another line do we pursue a similar course and accept the results without question. The nature of some tumor or ulcer is obscure; we submit the patient to a course of mercury or the iodides, and the lesion disappears. Its nature is then clear. Therapeusis has not confirmed, but it has made a diagnosis.

I present from Charpentier the following list of diagnostic errors made by eminent men, premising, however, that most of these errors were made at a period which, in a subject upon which our knowledge is so rapidly increasing, may be termed remote :

Huguier, uterine pregnancy taken for extra-uterine; Schlesinger, same; Depaul, extra-uterine pregnancy taken for a fibroid; Dolbeau and Charpentier, extra-uterine pregnancy taken for a retroverted pregnant uterus; Fournier, case misunderstood until the introduction of the finger into the uterine cavity; Martin, tubal pregnancy with hæmatocele, no diagnosis; Hutchinson, similar; Orth, two cases taken for hæmatoceles; Leven, hæmatocele; Capuron, Parent, taken for anteversion; McCallum, tubal, recognized only at autopsy; Walther, pregnancy in a double uterus, sound entered the empty cavity; Jobert de Lamballe, abdominal pregnancy taken for an ovarian cyst or a uterine tumor; Bricheteau, ovarian cyst taken for an extra-uterine pregnancy.—*Amer. Journal of the Medical Sciences.*

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PRESERVATION OF URINE FOR MICROSCOPIC EXAMINATION.—When it is desired for any reason to preserve urine for making a microscopic examination, Wendringer recommends the addition of a solution of boric acid in borax, made by dissolving 12 per cent. of boric acid in a 12 per cent. solution of borax. To the urine, to be preserved, one-fifth to one-third of its volume of this solution is to be added.—*Amer. Jour. Med. Sciences.*

EDITORIAL.

THE NORTH CAROLINA MEDICAL JOURNAL.

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AN ASYLUM FOR INEBRIATES.

The Constitution of North Carolina provides for the erection of an Inebriate Asylum (Art. II. Sec. 9): "It shall be the duty of the Legislature, as soon as practicable, to devise means for the education of idiots and [the proper care of] inebriates." The time is fast approaching when we will be driven to the necessity of erecting such an asylum for both classes mentioned in the Constitution, especially for inebriates, as public opinion has far outrun the action of our Legislature. The initiative taken at the Elizabeth City meeting of the Medical Society has fairly opened the question, and we would like to see it fully discussed by the profession, and offer our columns for the purpose. We take pleasure in presenting in this issue an article by Dr. E. J. Kempf, of Jasper, Indiana, and commend it to the consideration of our readers. Dr. Kempf has made previous contributions on the same subject, that have attracted the attention of numerous readers in other parts of the country, and we bespeak for him the same attention among the profession of our State.

REHABILITATION OF THE BOARD OF CHARITIES AND CORRECTION.

We are sure that our readers will be interested in, and will ponder well, the report of Dr. Battle, the Chairman of the Section of State Medicine, prepared for the Elizabeth City meeting of the Medical Society. It is full of wise suggestions and based upon correct premises, viz: that our charitable and penal institutions should be under the supervision of a Board independent of the managers and officers of these institutions and in no way dependent upon them for their appointment. Every officer at the head of these institutions in the State, who has the proper performance of his duties at heart, will welcome the supervision by a Board wisely chosen, in order that the people may know, through the disinterested reports of such Board, how they are performing their stewardship to the State—to the people—and to profit by whatever suggestions that would tend to render their service more efficient.

So far, the efforts to keep such a Board in active operation, notwithstanding it is, or should be, formed under the Constitution of the State, have been entirely futile. The reason seems to be, according to the reading of Dr. Battle's report, that no money was appropriated to pay the expenses of the necessary officers. This is the old, old story of such matters in our State, and has been the cause of many a failure, and is now threatening some of our most needed institutions. That a Board founded upon a constitutional provision should fail to receive the support of the Legislature, is simply to say that the members failed in an imperative duty.

Somehow or other, in great America, we are much given to making laws, which we execute or not, according to the popularity of the law, and it is a well-known fact that jurors are sometimes selected by lawyers for the defense in cases of murder, because of their well-known opposition to hanging for murder, knowing that, rather than haggle over a verdict, they will vote "not guilty," because of their disbelief in the righteousness of the demands of the criminal code. So that, throughout our communities, we find a current of belief that an unpopular law is not to be respected, especially if the law is one reformatory in its principle, and that principle is one which holds to personal accountability for old errors which have not before been interdicted.

The attempt to enforce the behests of the Constitution as to the formation of a Board of Charities and Correction came at a time when our beloved State was in the hands of corrupt officials, many of them strangers to the people for whom they were making laws, some of them transformed by a military order from slaves to be law-givers. The one man who worked faithfully for the establishment of this law upon the basis of humanity, was Dr. C. Tate Murphy, an honored member of the State Society, a pure legislator amidst corruption in high places, a philanthropist of the practical sort, who, after an honest effort, was compelled to confess that he could do nothing with the law as it stood. It was unpopular with officials, high and low—its duty was to bring to light the shortcomings of officials who had never before had their public trusts inspected or enquired into. Even at a later day in the history of the State, Gov. Vance's popularity was not sufficient to induce the Legislature to sustain this constitutional provision.

During the session of the Legislature of 1882 (?) it was again proposed by the North Carolina Board of Health that that Board should be constituted a Board of Health Charities and Correction. The principal objector, in fact, one who lobbied with much assiduity against it, was a member of the original Board of Charities and Correction, and his popular objections defeated the measure before it had reached the committee room.

Mature consideration of the whole subject convinced the Board of Health, as then organized, that it was as well that the alliance of the two Boards had been defeated, more especially in the light of the ignominious failure of such an enforced coalition in Massachusetts.

Dr. Battle's suggestion, therefore, has many things to be said in its favor, but the principal objections we will state briefly: 1. The Board of Charities and Correction is unpopular. Its life must depend upon an appropriation for its support and in the coöperation of the county and State officials entrusted with the penal and charitable institutions, and so far they have failed to take any interest in it. 2. The State Board of Health has succeeded in ten years, by its alliance with the medical profession of the counties, in building up an interest based on our growing knowledge of sanitary matters, a system of supervision, as rudimentary as it may be still considered, still strong enough to have influenced in these few years a marked improvement in our jails and poor houses. This is almost entirely due to the pride of the medical profession: ignore this, and the whole system drops into the same obsolete condition of the Board of Charities and Correction. 3. But suppose we unite the two Boards, what would then happen? Why, this! The Board of Charities and Correction being founded on a constitutional provision, it would be required that the law constituting the Board of Health would have to be engrafted on the other law, and would lose its vitality. Or, what would be more serious, as soon as the two laws were combined, even in the way most favorable to the plan so far executed by the State Board of Health, it would throw the selection of the members of the Board into the Legislature, the medical profession would no longer have a voice in it, and the day such changes are made will be the beginning of a certain failure. So far as we can see, from our knowledge of all the points bearing upon the question, the day the two Boards are coalesced, that day the influence of the best organized profession in the South--the Medical Society of North Carolina—will be estranged from this great work, and the end is easily conjectured.

That there is a duty for the Board of Charities and Correction in the supervision of the management of State institutions—moral and financial—is very evident, and if such a Board were faithful, it would be very much occupied without ever touching sanitary questions, or that of vital statistics. These latter matters must be left in the hands of a State Board of Health, and a State Board of Health of increased executive authority and an adequate appropriation of money.

WHO IS TO BE CONSIDERED A MEDICAL PRACTITIONER ACCORDING TO THE LAW?

There is a class of men in our State who come in under the "amnesty clause" of the last law regulating the practice of medicine, the terms of which are that "he must make oath that he was practicing medicine or surgery in this State prior to March 7th, 1885," This clause could not reasonably imply that any man calling himself a doctor, having gone into the business without any preparation, is therefore to be considered one in the eye of the law. We trust that the Clerks of Superior Courts who are to pass upon these cases will refuse all such men as they are in doubt about. For example, a man is known to be an itinerant vender of worm medicine, and has no other right to the title than this, is clearly not a doctor. Another locates in the back woods with a few patent medicines, having had no previous medical education or even pretension to it, exhibiting as his only authority a letter from a relative who is a physician, by his own admission merely throwing himself at a venture upon the credulity of an ignorant and helpless country people, is clearly not a doctor according to the accepted idea in the profession. A druggist, having no medical education, who for years has done counter prescribing, basing his practice upon what he has caught up from the prescriptions he has compounded for physicians, is not only not entitled to be called a physician, but is among the most dangerous class of those who illegally practice.

It looks almost trivial to state such simple cases of disqualification, but they are a few of the real cases which occur to us as as we write, and the number could be multiplied by the scores.

Our stand is this towards those who are not graduates, nor licentiates, that if one of these so-called physicians is such an one as we could not in justice and reason consult with, he ought to be treated as an illegal practitioner, refused to membership in the county boards of health, and the burden of the proof thrown upon him, before the courts, to show his title. As the election of Superintendent of Health is approaching (September 15th), doubtless there will be many unlawful practitioners desiring to become members; we advise that the qualified practitioners refuse to admit to membership all doubtful persons, leaving the burden of proof upon them.

This "amnesty clause" was a bitter dose to swallow, but the generation of the unqualified men will soon pass away, and we will see, in the course of twenty years or so, that time has purged our profession of the most of them, and long before they pass from the stage, the superior education of the younger men will have driven them into obscurity.

WE SECOND THE MOTION OF DR. SQUIBB.

Dr. Squibb, in "Ephemeris," July, 1889, says: "The work of the last revision is understood to have been done almost entirely by sub committees; and their work was collected, collated, corrected, arranged and re-written into uniformity of style and nomenclature, and was then put through the press almost entirely by Dr. Charles Rice, the Chairman of the Committee of Revision. This enormous labor, the character and quality of which very few have any adequate idea of, was quite unpaid, and money had to be borrowed to defray the actual outlay for expenses. Now, there is plenty of money, and always will be in future if the book be fairly well managed, and therefore this taking of so much unpaid labor should never occur again, and ample provision should be made for trying every single process in the book, by competent hands, before it is finally adopted. Every article of material should be examined, and every test be applied. The President of the Convention should be Chairman of the Committee of Revision, and he should be well paid, and be well supplied with money beside his pay, with which to employ competent aid for the work. All the work should be done under his immediate direction and control, and should then, as far as necessary, be submitted to sub-committees for revision and confirmation, thus reversing the plan of the last Revision where there was no money with which to have the work done in this way. The Chairman of the last Committee of Revision, with his well-known scholarship, ability, energy and industry, and his now matured knowledge and experience in the work, is the man of all others fittest for President of this Convention of 1890, and for Chairman of the Committee of Revision, if he can be induced to take the position. And the inducement most likely to have weight in influencing him to accept the position, would be to confer on him the entire responsibility, with the committee-men for his counsellors, and his sub-committees. This writer has worked enough for him and with him to know his peculiar fitness for this important work, and as he has been thoroughly tried in it during the past ten years, and has done all that was possible for one man to do, the writer is constrained to offer the opinion that the Convention will consult its best interests in trying every means in its power to get Dr. Rice to accept its presidency; and, although neither a delegate nor a member of the Committee, the writer hereby, without fear of adverse criticism, nominates Dr. Rice for President of the Convention of 1890."

[We most heartily second Dr. Squibbs' nomination, provided the Convention votes Dr. Rice a salary.]

HYDROPHOBIA FROM BITE OF A CAT.

The occurrence of hydrophobia with a clear history is sufficiently rare to merit this notice of a case recently in the care of a physician of this city.

On the 26th of May, Frank W., a child 19 months of age, was playing in his father's yard, when a strange cat sprang out from behind a box and bit him in the face, leaving the imprint of its teeth in seven places. Four of the three were quite large, the others insignificant. It is noteworthy that the cat had been seen by the father a few moments before, and its actions were unnatural, and it was known to be a cat not belonging to his household or the neighborhood. As soon as the child was bitten a physician was sent for, and, not believing or suspecting that the animal was rabid, he prescribed a lotion for the face and assured the parents there was no danger. The larger bites twisted over and discharged some pus. In a week's time the face was apparently well, and all fears were allayed. But three weeks after the injury was inflicted these larger places all inflamed, and there was distinct vesication around the edges. As these points of inflammation were subsiding there appeared patches of herpes zoster about the child's body, chiefly on the gluteal region, and the crops of blisters were apparent, though quite scattered, when he came under treatment here.

On the 7th of July the child had an attack of nausea and was restless at night. The mother, thinking the sick stomach due to constipation, gave an enema, which brought no relief to his symptoms. On the night of the 8th she attempted to give the child a dose of oil, but, from her description of his symptoms, she failed, because of the onset of œsophageal spasm. At noon of the 9th he was first seen by a physician here. His symptoms consisted in restlessness, irritability and inability to swallow liquids or to nurse. He would grasp a tumbler of water, carry it towards his lips, and suddenly crying out, attempt to throw the vessel down. He was put on ten-grain doses of chloral, repeated every two hours until sleep was induced, and great quiet enjoined. At the afternoon visit he was still restless, rapidly changing his position and going, if allowed, from one person to another. His breathing was quick, pulse rapid, pupils dilated, and every evidence of fright prominent. Noises increased his unhappy condition, until he was brought under the influence of the chloral. He passed a tolerably quiet night, but the morning of the 10th found him haggard, still wanting water, but suffering acutely with spasm when it was brought to him or he was urged to drink. Temperature on the 10th at 9 o'clock was 101° (rectal), pulse and breathing and general appearance of fright the same, although he was stupefied on the chloral. The drug was repeated so as to continue the influence to moderate narcotism. At 10 o'clock p. m. temperature was rapidly rising, then 103°. At 3 o'clock p. m. he had a general convulsion, and when seen by the physician half an hour later was in partial stupor varied with convulsions of more or less severity. Rectal feeding was attempted but failed, and the administration of medicines by the bowels was without result. During the afternoon the temperature rapidly rose to 106° and above, and coma set in, death ensuing at 8 o'clock in the evening of the 10th of July.

The child was a very strong, healthy little fellow, and had been singularly free from sickness all of his life. He lived in an inland town in South Carolina and was brought here on the night of the 7th of July.

The remarkable absence of salivation of any noted amount is only to be accounted for by the rapid culmination of the disease in death.

To resume, the animal was rabid. It not only attacked the child without provocation, but also the father, who went to the child's rescue. It was killed, but was in convulsions before its death. The wounds inflamed without known cause, and, after a period of apparent safety, between the fourteenth and twenty-first day after the bites were inflicted.

The acute symptoms of hydrophobia began on the forty-third day after the original poisoning, and the herpes zoster appeared after or about the time of the secondary inflammation of the wounds, and continued up to the fatal issue, denoting the profound effect of the poison probably on the nervous system, which was only awaiting the full incubation to break out in the fulminant attack. Except the absence of profuse salivation, the case is complete in history.

The child was seen by several physicians, and the diagnosis of the attendant confirmed. An attempt at inoculation of a healthy animal with saliva from the child was intended, but the enforced absence of the attending physician from the city, immediately after the death of the child, prevented the experiment being made.

* * *

LINES OF A SPECIALTY SHARPLY DRAWN.—The *London Medical Recorder*, among some other curious things relating to the medical profession, tells the following: "In China, it appears, the distinction between physicians and surgeons is more sharply defined than with us, and every man is expected to stick to his own branch of the profession. A rich merchant was struck by an arrow which remained fixed in the wound. The principal surgeon of the place was sent for, and, after insisting on pocketing his fee in advance, cut off the projecting end of the arrow, leaving the point buried in the patient's body. On being asked to extract it, he said that medical etiquette would not allow him to trespass on a brother practitioner's province; the arrow being inside the body, the case was clearly one for a physician!"—*Boston Medical and Surgical Jour*

REVIEWS AND BOOK NOTICES.

TRANSACTIONS OF THE SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION. Vol. I. Session of 1888. Birmingham, Alabama. Press of Caldwell Printing Company, 1889.

In 319 8vo. pages we have the Transactions of the Southern Surgical and Gynecological Association. It is a creditable volume, containing many good papers, by gentlemen who make surgery a part of their business.

We do not know what was the origin of the idea that there should be a Southern Surgical Society, it surely cannot be because there is anything distinctively peculiar to our section of America in surgical proceedings. Some of our practitioners are deeply imbued with the modern practice of aseptic and antiseptic surgery, others have not yet opened their eyes to the greatness of the era. Some of our Southern physicians do good surgery, and would do nothing else if they could get enough of it; most of them, even in our largest towns, could not live by their surgical practice alone, and therefore do general practice. These remarks apply also to the North, but in both sections more capital surgery is done by our country doctors than ever before, this impulse having been imparted by the war. As a matter of convenience of intercommunication, to have a Southern Society is well enough, but it is not the best way of promoting American Surgery. The Southern brain is as quick to invent and put in practice surgical procedures, but so soon as the Southern man reaches a high position he must go to the large Northern or Western cities to get patrons. The centres of population in this country, therefore, do not necessarily represent the intellectual growth of a particular centre, but only the accumulation of the most gifted, drawn together by the superior advantages offered. Surgery is a great republic having no sectional boundaries, and no effort can so distinctly confine it. If the Southern Surgical and Gynecological Society is to flourish, it must have a better foundation than the pride of section, and we have no doubt it has.

The papers contained in this volume are as follows: "The operation of Gastrostomy, with a report of a successful case, by W. B. Rogers, M.D."; "Shock of Injury, by John R. Page, M.D."; "Operative Procedures in Hypertrophy of the Prostate, by R. D. Webb, M.D."; "Antiseptic Surgery in Country Practice, by J. M. Taylor, M.D."; "Dermoid Cysts of the Coccygeal Region, by E. J. Beall, M.D."; "Fractures of the Forearm, by John Brownrigg, M.D."; "The Treatment of Strictures of the Urethra by Electrolysis, by S. M. Hogan, M.D."; "Cases in Surgery, by R. M. Cunningham, M.D."; "Indications for Operative Interference in Cerebral Troubles, by T. O. Summers, M.D."; "Cranial Surgery, by De Saussure Ford, M.D."; "Practical Aseptic Surgery, by J. W. Long, M.D."; "Plaster of Paris in the Treatment of Fractures, by W. F. Westmoreland, Jr., M.D."; "Operative Procedure in Traumatic Epilepsy, by J. T. Wilson, M.D."; "Report of a Case of Aneurism of the Ascending Aorta, Involving the Innominate Secondarily, by F. T. Meriwether, M.D."; "A Case of Cut-Throat, by J. M. Taylor, M.D."; "Forces Preserving Cerebral Integrity, with Report and Study of Cerebral, Meningeal and Sinal Lesions, by W. Locke Chew, B.S., M.D."; "Electrolysis in Morbid Alterations that are Produced in the Prostate by Gonorrhœa of the Urethra, by John D. S. Davis, M.D."; "Cystoscopic Exploration, by H. V. L. Brokaw, M.D."; "Chronic Pelvic Cellulitis and the Conditions which Simulate It, by Virgil O. Hardon, M.D."; "The Medical Treatment of Fibroid Tumors of the Uterus, by Bedford Brown, M.D."; "A Successful Vaginal Hysterectomy for Carcinoma Uteri, by Wm. H. Wathen, M.D."; "Certain Forms of Menorrhagia and Treatment of the Same, by W. D. Bizzell, M.D."; "Two Cases of Vicarious Menstruation, in One of which was Floating Kidney, by De Saussure Ford, M.D."; "A Review of the Treatment of Uterine Diseases by Electricity, by J. R. Buist, M.D."; "Fibro-Cystic Tumor of the Uterus, by E. J. Beall, M.D."; "Laceration of the Perineum and Rectocele, by J. H. Blanks, M.D."; "The Field and Limitation of Laparotomy, by I. S. Stone, M.D."; "Aphorisms of Antiseptic Surgery and Gynecology, by F. T. Meriwether, M.D."; "Annual Oration, by W. F. Heyer, M.D."

We would like to speak particularly of some of these papers from which we have received so much instructive material, but commend the perusal of the volume to our readers. The officers of the Society for 1888–'89 are: President, Hunter McGuire, M.D., LL D.; Secretary, W. E. B. Davis, Birmingham, Ala. Among the membership we notice four names from North Carolina. The next meeting will be in Nashville, Tenn., November, 1889.

A LABORATORY GUIDE IN URINALYSIS AND TOXICOLOGY. By R. A. Witthaus, A.M., M.D.

Dr. Witthaus has been eminently successful in producing text-books especially adapted to the profession of medicine. His large experience in teaching medical students, his knowledge of the fact that to get their attention only such matters as are very practical will be appropriated by the average doctor; knowing, also, that there are times when the laziest and most indifferent doctor must have enough chemical knowledge for an emergency—in short, knowing the woful ignorance of most doctors about practical chemistry—he has prepared just the book for them in this "Laboratory Guide." It is printed oblong on alternate leaves, giving a blank page for notes.

We have entered on one of our blank pages opposite page 16: "When, by the addition of liquor potassæ, there is an abundant precipitate, first filter the mixture before adding the copper solution."

It always gives us pleasure to recommend to the profession those works they really need to help them in their practical every-day affairs, and this little book is one of that kind.

STYRONE—a new antiseptic—is derived from liquid storax and Balsam of Peru. It has an agreeable odor, is said to be efficient and non-poisonous, is described with results of some trials of it made in the *Boston Medical and Surgical Journal*, by Dr. H. H. A. Beach, of Boston.

THE pendulum of therapeutic ideas in France seems to be swinging back into a mediæval groove, judging from certain recent developments in the Paris Biological Society. A recent report thereto by Brown-Sequard, recalls the formula for "Diasatirion" of the Cordic Dispensatory of 1546, which was a survival in sixteenth century materia medica of the "Satirion" of the time of Nero. "Diasatirion" contained, among other ingredients, the testicles of the wolf and skink. Brown-Sequard, evidently inspired by this formula, has lately claimed for a new preparation, having as an essential part these ingredients, properties almost identical with those ascribed to "Diasatirion."—*Medical Standard.*

CURRENT LITERATURE.

HORSE-NETTLE IN EPILEPSY.

Dr. J. L. Napier, of Blenheim, South Carolina, writes to the *Medical World:*

Solanum Caroliniense (horse-nettle: A low, perennial plant, with deep, running roots, belonging to the order Solanaceæ, the same which contains the potato, tomato, belladonna, etc. The stems are one to two feet high, rather straggling branches, and half shrubby at the base. The stems and the midrib of the lower side of the leaves are more or less thickly armed with short, sharp, stout, yellowish prickles. The stem and leaves are also covered with minute, star-shaped hairs of from four to eight points. The leaves are large for the size of the plant, two to four inches long, short-stalked, oblong in outline, sometimes only coarsely and irregularly toothed, sometimes with three to five deep lobes on each side.

The flowers are in racemes, mostly from the axils of the upper leaves. There are from three to ten flowers on each raceme, on rather short pedicles. They are an inch or less in diameter when expanded, having a five-parted calyx and a five-lobed bluish or whitish spreading corolla. The flowers are succeeded by round berries, half to three-fourths of an inch in diameter, when mature, of a yellowish color, and filled with pulp and numerous small seeds.

The pedicles of the berries are reflexed, and the berries remain upon the plant into the winter. Common in the Southern and Western States, and becoming too frequent in the North.

Darlington says: "This is an exceedingly pernicious weed, and so tenacious of life that it is almost impossible to get rid of it when once fully introduced. It grows in patches so thickly as to deter stock from feeding among it, and even to monopolize the soil, while its roots gradually extend around to a great depth. It seems to prefer sandy soil, at least in the North, where it is sometimes called sand-brier. As it is perennial, and spreads by the root, only the most thorough treatment will eradicate it."

I first heard of the horse-nettle as a remedy for epilepsy during the summer of 1887. I then heard of a negro girl who had been an epileptic from early childhood, whose epileptic seizures I had often witnessed, who had been cured by the use of it; also another, who was epileptic, in the same way.

The negroes who used it made a tincture by steeping the berries in whiskey. The girl above alluded to undoubtedly had *le grand mal.* Her general appearance was idiotic. She had been cured and had had no return of her old trouble for several years. After finding out all I could about the nettle, I determined to try it in the case of a white woman, who lived in my neighborhood, who had been suffering from epilepsy for several years. It was very seldom that she went a week without a convulsion, and would sometimes have several in close succession. I have seen her, especially at her menstrual periods, when it seemed impossible for her to survive them. She began the first of October, 1887, taking a tablespoonful of the preparation made from the nettle, three times a day, made by bruising the berries and steeping them in whiskey. Four months after she began the use of the above preparation her husband reported that, with the exception of a slight spasm of the muscles of the neck during the first week, she had had no return of her "fits," though she was still troubled with some headache (which had been a very troublesome symptom in her case), said his berries were out, and wished to know if the roots would answer the same purpose. I advised him to try them. He did so, and reported that they had the same effect as the berries. She continued the preparation made from the roots two or three months, when her headache having subsided she quit the use of it, and up to this writing has had no return of her epileptic attacks. I mention the use of the roots in this case, as it is the only one, so far as I know, in which the roots have been used.

The above case had been the rounds of all the physicians in reach of her, and all, myself among the number, have failed to give her any material relief. I have used it in three other cases of epilepsy with relief to the attacks so far. I have used it in hysterical convulsions with prompt results. I have also used it in one case of eclampsia, in which it controlled the convulsions, after I had failed with everything else I had tried. It was after its use in this case that I wrote Dr. Taylor and requested him to experiment with it.

I prepare a tincture by bruising the berries and adding dilute alcohol to them, using berries enough to be sure and have a tincture saturated with the active principle, then give one teaspoonful every three hours until drowsiness and symptoms of vertigo are produced, and then lengthen the intervals between doses. In the cases of epilepsy I instructed the patients to begin with a teaspoonful three times a day and gradually increase the dose until it produced symptoms of vertigo, then to lessen the dose until that symptom subsided.

Whether the horse-nettle will prove a success or not, I do not know. So far as my limited experience goes, it is a very valuable addition to our active agents in combatting convulsive disorders.

My object in requesting Dr. Taylor to give it a trial, was to try and settle the merits of the drug so that if it proved a failure, the profession would not have another new remedy that is worthless foisted upon them.

COMPARISON OF THE VALUE OF PARALDEHYDE AND SULPHONAL.

The practical deductions that my experience with these two drugs would suggest are:

1. That paraldehyde is the safer hypnotic where a continuous action is desired.

2. That paraldehyde has a wider range of application in mental disease than sulphonal, and that in the insomnia of acute or chronic disease, where pain, cough, dyspnœa or fever exist, sulphonal is less effectual than paraldehyde.

3. That in all depressed mental states sulphonal acts ineffectively, and acute melancholia should be a contra-indication to its use, while in maniacal conditions it is more satisfactory than paraldehyde. That the use of the former in general paralysis of the insane should be carefully considered, while in acute melancholia the latter is usually effective.

4. That a high degree of physical debility with insomnia should contra-indicate sulphonal.

5. That in 18 per cent. of cases various degrees of sulphonal intoxication appear, and that it would seem that the drug is capable of being dangerous to life, and that, therefore, the commencing

doses should be small, some persons being extremely sensitive to its influence.

6. That the effects produced by sulphonal are not always in proportion to the dose administered, and that in some cases, at least, it very seriously interferes with the normal bodily secretions, while paraldehyde does so to a very much less extent.—C. M. HAY, M.D., *in American Journal Medical Sciences.*

DEATHBED CONFESSIONS.

A protest was not long since raised against a too ready acceptance of a dying declaration as necessarily true, and it was urged that, owing to his enfeebled condition, the mind of the dying person could seldom be in that clear state so necessary for a strict adhesion to absolute facts. But a distinction must be made between dying declarations and dying confessions. In the former, the person can have but little motive for not speaking the truth, and, if the medical man who received the declaration thought that the dying man was not in full possession of all his mental faculties, he ought to say so; but, in regard to deathbed confessions, motives often do play a very important part. A single instance recently narrated in an American contemporary by Dr. Benjamin Cotting will suffice. A man under sentence of death for murder confessed to having committed another murder two years previously. In this case the victim's skull had been beaten in, and the murderer stated where he had done the deed. The discovery of a hammer at the spot indicated by the criminal seemed to lend great plausibility to the confession; but Dr. Cotting had examined minutely the wounds on the murdered woman, which were peculiar, consisting of numerous clean, sharply cut, crescentic wounds, such as might have been produced by the hammer in question. The criminal had in reality had nothing to do with this first murder, and it was evident that he had only made the statement in the hope that some well-disposed but foolish people would take up his case and urge that a monster who could be guilty of such atrocious crimes could not be in his right mind, and thus obtain an acquittal for him on the ground of insanity. Such a train of events had, indeed, happened a short time before his conviction in the case of another murderer. It may be urged that such a confession as this ought not to be compared with one made by a person dying from disease; but to this we would say that to the condemned criminal the fear of death must be quite as near and as real as to the person on his deathbed from a natural cause. It can easily be understood that other motives might be at work to influence the dying person to make an untrue statement in his confession; and, indeed, it might well be said that a person who could alone or in consort with others take the life of a fellow-man would not be likely to stick at a lie on his deathbed if it could save a companion or confederate from the gallows.--*Brit. Medical Journal.*

THIS AND THAT.

(*Two Medical Portraits to be Hung up in the Heart.*)

There are teachers, and teachers of medicine, just as there are doctors. One class is kindly considerate and helpful, the other unkindly, inconsiderate and obstructive. Samples of either may be found in any considerable city. Illustrative of these, a distinguished laryngologist related to us a bit of personal experience. Many years since he was house surgeon at Charity Hospital under the late Dr. W. H. Van Buren. On one clinic day the clinic room at Charity Hospital was especially crowded, and the material had been carefully prepared by our friend. In his polished, courtly manner Dr. Van Buren described the characteristics of a surgical case, the various steps of an operation that was called for, placed the patient in the proper position, and then, taking up the knife, handed it to our friend, saying he desired him to do the operation. In well chosen phrase he introduced him to the class. The operation, which was a simple one, was quickly and deftly done after the manner of the distingushed professor. The effect of this kindly courtesy by the professor to his young assistant exerted a magic influence upon the spectators. Round after round of applause attested their hearty approval. The lesson was one of the most important ever taught that class. Its memory has modified for good both the chief actors and the witnesses.

In a more humble and less conspicuous manner the same deed is being daily repeated in the relations of older practitioners to their juniors. Those of us who have been the recipients of such kindly helpfulness hold the occasion as a white letter-day in our lives, and the physician so helping us as a type of that which is noblest in the profession.

But alas, the opposite of this is also to be seen. Scene second is also laid in the amphitheatre of a large hospital. The seats are all crowded with waiting students and medical men. A patient is introduced whose leg needs amputating below the knee. The assistant of the surgeon has arranged all things for the convenience of his chief. The surgeon is a gray-haired man, known throughout the surgical world for certain professional acquirements and personal characteristics. Suddenly a thought strikes him. It is a favorable opportunity to exhibit his superior experience and to display authority. So he seats himself, and in a forbidding manner orders his assistant to perform the operation. At every step he took great care to point out the defects in the technique of his young assistant. Merciless criticism accompanied every move. Sarcasm and ridicule were employed to such an extent as to seriously embarrass the young man. The operation was finally completed, but there were no plaudits for the professor. The operator was humiliated, angry, discouraged, and the audience was thoroughly incensed at the unfair deportment of the professor. Apparently the professor thought he had done a smart thing, but he would change his mind could he but know the real thoughts of his audience. The same man has the reputation of being brutal to his poor patients and quarrelsome with his professional equals.

Here, too, we have a type of medical man to be found in most large communities, and not a few small ones. He is the man over whose death there is general rejoicing. Along his pathway lie the wrecks of those ruined or scared by his selfish egotism, his brutal disregard of all right, all equity, all manliness. Low in his make-up, low in his life, professional or otherwise, he drags to his level all whom he can reach.

The practical question is not connected with a reform of this latter class, as this is rarely possible, but it is which of these types shall the young men entering the profession model their lives after! To each young medical man is given the alternative of being "this or that."—*American Lancet.*

CEREBRO-SPINAL FLUID OF THE NATURE OF A SECRETION.

Dr. W. D. Halliburton (*British Medical Journal*) makes a report on cerebro-spinal fluid. He shows that there is a reducing substance in the fluid which Claude Bernard spoke of as sugar. This reducing substance Dr. Halliburton believes to be, not sugar, not alcapton, as suggested by Gorup-Besanez, but pyrocatechin. There is no peculiarity as regards the saline constituents of cerebro-spinal fluid. It is in the exceptional character of the proteids, and in the presence of pyrocatechin, that this fluid stands clearly marked off from serous or lymph like fluids, and would be more correctly classified with the secretions.

MEDICO-LEGAL DETECTION OF HUMAN BLOOD.

Up to the present time the only method of distinguishing human blood is by the measurement of the red corpuscles. This method can only be applied to fresh blood. S. Monckton Copeman, M.A., M.B., gives us a new process in the *British Medical Journal*, July 27, founded upon the apparent fact that human blood contains no crystallizable hæmoglobin.

The process of crystallization of the blood adopted by the author is that of Gamble, and is as follows: to defibrinated blood add about 1-16 of its volume of ether, and shake the mixture for some minutes until it becomes perfectly transparent or laky. It is then to be set aside in a cool place for a period varying from a few hours to two or three days, when crystals form in abundance. Care should be taken that, after the blood has been made laky, it should be kept under the atmosphere of ether for some time, which may be accomplished by performing the agitation of the blood with ether in a stoppered bottle, and gradually allowing the air to escape as the ether is volatilized. By this means the contained air is gradually replaced by ether vapor, while at the same time the small portion of blood which is forced out around the stopper of the bottle, on drying, fixes it in its place, and so prevents ingress of air again. Leave the bottle in a room of ordinary temperature. The thing to be especially observed is that the blood be allowed to remain a sufficient length of time in contact with the ether. The right period is readily hit upon by removing a drop of the blood to a slide, after varying lengths of time (two days, at least, for some of the animals), and then, when the edges of the drop are slightly dry, gently lowering a thin cover-glass on the surface of the drop. The cover soon becomes fixed by the drying of the blood at the edge, and then, if the preparation be examined under the microscope, the commencing formation of radiating crystals of oxyhæmoglobin will often be seen in an hour or so, while they gradually enlarge in size to such an extent as sometimes to occupy the whole space beneath the cover-glass. It is advisable not to cover the drops at once, as the large vacuoles caused by the presence of the ether seriously interfere with the formation of the crystals. He has crystallized the blood from the following animals: horse, bullock, sheep, pig, dog, cat, rabbit, squirrel, Guinea-pig, rat, mouse, chicken and pigeon, covering nearly the list of animals whose blood would be used with criminal intent.

A solution of bile-salts added to the blood will cause the coloring matter to crystallize according to Burdou-Sandeson. According to Copeman it seems "perfectly certain" that the colored crystals of human blood is composed of reduced hæmoglobin, not of oxyhæmoglobin.

Very small quantities of blood sufficed to perform the test, and dry blood-stained cloth yielded crystals after three days.

THE KOLA NUT, which is used largely in the interior of Northern Africa as a stimulant, is found by Surgeon Frith (*Brit. Med. Jour.*) to contain the following percentages: caffein 2.4, theobromine 0.02, water 11.9, proteids 7.7, starch 33.7, sugar 2.8, fats 0.68, tannin 1.6, coloring matter 3.7, cellulose 30, ash 6.5. This agrees with previous analyses in U. S. Dispensatory.

DR. SQUIBB'S EPHEMERIS (JULY, 1889) HAS MANY MATTERS OF INTEREST.

Diphtheria; Evolution of Communicable Disease; Disinfection by Burning Sulphur; Hydrogen Peroxide; Opium Assay; Boston Opium; Specific Gravity of Liquids; Crude Cocaine and Its Assay; Spirits of Nitrous Ether; Cascara; Neutral Oleic Acid; Musk; Tincture of the Chloride of Iron; Commercial Islap; The Pharmacopœia of 1890; Testing of Lithium Carbonate; Tincture of Strophanthus.

We were hungry for another "Ephemeris," this being the first one that has visited our library table for many months, and the first impulse was to devour its contents at one sitting. The above transcript of the articles treated show that some attention has been given to medical subjects as well as to pharmaceutical chemistry. Dr. Squibb was President of the King's County Medical Society during the six consecutive meetings when the treatment of diphtheria was discussed. The Brooklyn profession have given us many good things, but none more practical than the treatment of diphtheria. That Dr. Chapman's alcohol treatment still holds its own after years of trial, and is nearly as popular as corrosive sublimate, shows that either it has effected cures, or else the disease has been of a less virulent form, the latter half of the proposition being one of the suggestions of Dr. Squibb. We expected to find some notice of the oil of turpentine in such a protracted discussion. "Sajou's Annual" for 1888 has so much of a positive character about this drug, that we presume it must have been used largely. In the chief commercial port from which it is exported it has been sadly neglected as a remedy, and we venture to say, at the risk of being called skeptics, that all remedies lose their celebrity when they are pitted against such cases as we encountered in Wilmington in 1875.

We quote some of Dr. Squibb's conclusions from his "Evolution of Communicable Diseases":

1. Susceptibility to disease must precede diseased action; and the causes of disease, whether communicable or not, must be evolved from this susceptibility.

2. This susceptibility is acquired upon a normal basis of health, which basis has a normal tendency to persist or resist, and therefore the susceptibility is preventable.

3. This susceptibility varies in degree from insusceptibility to the highest rate; and the degree of activity or virulence of contagious virus must coincide with the degree of susceptibility in the production of disease, either factor being impotent without the other.

4. In controlling susceptibility the virus of contagion and other causes of disease are necessarily controlled.

5. Susceptibility is acquired gradually and imperceptibly through a process of evolution, and its control or management must be through a similar process." * * * "Hence it would appear that the control of disease must be a process of evolution incited and fostered mainly in the management of the young, that is, of the commencing generations where control is at once easiest and most effective."

Boston Opium is a commercial name given to crude opium which has been manipulated in order to give a uniform, shapely, sightly appearance to lumps, made to contain the lawful 9 p.c. of morphine, but having all the external appearance of original packages. These, coming into market competition with lumps not manipulated, gives all the commercial advantage to the one with fair exterior, viz: the Boston, or "Pudding Opium," as it is also called. Dr. Squibb shows that, in certain conditions, the buyer pays 79 cents per pound for appearance against actual value. It is well enough for our doctors to know something about the commercial value of crude drugs, but we would like to ask if there is a doctor in the State, of the last decade, who knows the quality of a bit of crude opium, or, for that matter, any of the crude drugs entering into the handsome coated pills he buys.

Crude alkaloid Cocaine is imported now from Peru, making a vast improvement over the importation of the leaves; and we are pleased to learn that its quality has steadily improved, notwithstanding the protective duty of 25 p. c. on the alkaloid, as against the free crude drug, it is cheaper to import it.

Dr. Squibb gives nearly half of the 124 pages of this issue to the Spirit of Nitrous Ether, comparing processes of the U. S. Ph. and Br. Ph., all of which the delegation to the Decennial Revision of the Pharmacopœia from our State Medical Society must read, as, indeed, all of the pharmaceutical articles in this number. *A propos*, we commend most heartily what the "Ephemeris" has to say of the

Pharmacopœia of 1890, for which see another page in this issue, If the present President of the Committee of Revision can be induced to remain in this position for the next decennium, it would be economy to give him a salary, and put a sufficient sum at his command for the necessary purposes of this great work.

"MITHRADATISM" (TO EXPRESS THE IDEA OF ARTIFICIAL IMMUNITY FROM DISEASE).

Medical writers have for sometime been conscious that medical literature needed a new word to express the artificial production of immunity against disease. When small-pox was the only infection which could be avoided by preparing the system against it, the term vaccinate and vaccination answered very well. But we cannot say that we "vaccinate" against rabies, or anthrax, or, in other words, we have no general equivalent for that verb.

We believe that it is Professor E. Ray Lankester who has come forward in this emergency and proposed the term "mithradate" and "mithradatism." This word is taken from the name of the Phrygian King Mithradates, who lived about 100 B. C., and who is credited with having so thoroughly saturated his system with poisons that he was proof against them.

Accepting Professor Lankester's suggestion, we could speak of Pasteur as mithradating patients bitten by rabid dogs, or mithradating sheep against anthrax; and we could speak of the successful attempts of Ferran to mithradate against cholera, and of Friere's firm belief in the mithradating power of his yellow fever cultures. The name of the process would be "mithradatism"; and the name of the thing, corresponding with "vaccine," would be "mithradatine." We submit Professor Lankester's new word to the suffrages of our readers, only regretting that he could not have found some ancient and toxibund Phrygian who had a little more euphonious name."—*Medical Record.*

[The misapplication of the words "vaccine" and "vaccinate" in connection with inoculation of virus other than that of cow-pox, has long been objected to, and while the substitute lacks euphony, it is not harsher than some of the barbaric words already in common use. Attaching the idea set forth by the *Record* to the word, it will readily grow into use.]

OBITUARY.

PROFESSOR JAMES L. CABELL, A.M., M.D., LL.D.

The announcement of the death of Professor Cabell carries sorrow to the hearts of the profession of the whole country, but especially to the hundreds of the Southern physicians who received their medical education at the University of Virginia.

Dr. Cabell was born in Nelson county, Virginia, August 26th, 1813. He was the great-grandson of Dr. William Cabell, a surgeon in the English Navy. He died August 13th, 1889, at Overton, Virginia, at the University of Virginia. He received his degree of A.M., from the University of Virginia, in 1833, and his degree of M.D., from the Medical School of the University of Maryland, in 1834. He pursued his studies in Baltimore and in Paris until 1837, when he was called to the Chair of Anatomy and Surgery in the University of Virginia, where for half a century he taught, and for the greater period of his service, both Surgery and Physiology.

As a teacher Dr. Cabell was eminently successful, indeed, it may be said that it was his great ability, his thoroughness, his predominating moral character, which for years was the great attraction to this medical school.

In both of the branches of medicine he taught he always had the mastery of the subject. His lectures were constantly revised, and especially in physiology, that department which taxes the most active brain to keep pace with the vastness of the items which are so rapidly accumulating, and putting to the test at all times the judicial quality of the mind in the acceptation or rejection of new material, was the domain in which he probably excelled. The whole world of science was laid under contribution in his studies, and to the very last his lectures showed that he had not overlooked the most recent knowledge bearing upon his professorships. It is a rare thing for a man to be a teacher fifty years, and not teach obsolete theories, but such was Dr. Cabell's merit to the very last year of his teaching.

Dr. Cabell was one of the prime movers in the American Medical Association in elevating the standard of medical education and the institution which he represented admirably sustained his efforts, by keeping up a standard, which for many years, and even to this day, has almost no equal in this country.

Comparative Anatomy and Physiology was one of the branches taught by Dr. Cabell, and until in recent years, since a course in Biology has in a general way been introduced into the more advanced courses of some of the better medical colleges, his course was unique. It was based on his own syllabus, and showed how deeply he entered into the study of the animal kingdom. It was his profound knowledge of such subjects that made it eminently fit that he should have taken up the study of the origin of the human races. It will be remembered that in 1858 he issued a very interesting volume setting forth the origin of mankind from an original pair as set forth in the Biblical narrative. The book has now lost somewhat of its interest, since the opponents of the Biblical genesis have sought other arguments in the new doctrine of Evolution, but it is an esteemed volume in our library, and may be fairly taken as an exponent of the healthful teachings of a consecrated Christian, and a truthful exposition of sound science.

In 1878, after the devastating epidemic of yellow fever in the Mississippi Valley, the whole country was stirred to the depths on the subject of preventive medicine. Foremost among the medical men who lent their aid was Dr. Cabell. He was a prominent figure in the deliberations of the American Public Health Association in Richmond in the fall of 1878. He was chosen for the next President of this Association. But in the meantime Congress has organized a National Board of Health, and Dr. Cabell was chosen to be its first President. The story of the failure of this organization is too sad to be rehearsed now: its strength was undermined by the envy of contending parties, until political methods far beneath the high character of its President were necessary to offset the machinations of ambitious opponents, inducing Dr. Cabell to withdraw. The National Board of Health was an experimental organization which aimed at a course of usefulness, and has made a deep impression upon the whole country, and especially upon the men who have had the largest experience in practical sanitary work. Dr. Cabell entered into the study of State medicine with a great deal of zeal, and was an acknowledged leader for many years. His presence at the meetings of the American Public Health Association and other meetings of similar character, inspired confidence, denoting him as a man of earnest purpose, well furnished in all the matters of interest, and bearing the honors put upon him with easy dignity.

He was too pure and honest to do an intentional wrong, and too generous to leave it without amend when he knew of it. His exalted dignity was so softened by his tenderness of heart, that the respect which he immediately commanded soon ripened into a genuine affection with all who knew him. To the junior editor of this JOURNAL his memory is nourished with grateful recollections of his care for him. In trouble he was a wise and patient counselor, in sickness and distress a tender physician, and a friend whose acts and attentions betook of the nature of an interested father, and as a professor he was as surely just as he was rigid in his dealings with his students. He never indulged any favoritism, nor did it ever appear possible that he could, for in keeping with his honesty of purposes and living, he knew men only as they impressed him with their worth.

If he was even harsh in his judgments of students, in our recollections of him, he was justified by what knowledge he had of the person who came under his displeasure. Himself the pattern of a gentleman, he never brooked any infringement upon his dignity, nor did he ever allow an opportunity to pass when a kind word or encouraging attention would cheer up the disheartened student. It is safe to say that no one of the hundreds who have received an education at the University of Virginia fails now to feel an affectionate respect for Dr. Cabell's memory, however far in time they may be separated from him. To most of us his death is a personal affliction, and to all who have enjoyed his acquaintance, laymen as well as physicians, he will always be an example of a just man.

As his days were so full of usefulness, so, too, his rest is the reward that follows a good man's earnest, pure life.

SKETCH OF DR. J. W. S. ARNOLD, by MIDDLETON MICHEL, M.D., of Charleston, S. C.

Independently of the interest which we all must feel in the successful and distinguished career of every son of the Carolinas, there seems to me, on this very account, that an obligation exists on our part to transmit a careful record of the circumstances which do commemorate every such event.

The following is a brief summary of the very rare and rapid advancement in our profession of one who was born in Charleston, South Carolina, was educated at the North, and died at the early age of 42 years, loaded with honorable medical achievements. He is the grandson of Dr. Schmidt, of this city, and the nephew of Dr. Schmidt, Jr., the private pupil of the celebrated Valentine Mott, of New York.

Dr. John William Schmidt Arnold was born in Charleston, South Carolina, on May 10th, 1846. His father was Cicero Milner Arnold, was fourteen years a merchant in Charleston, the business being carried on by the firm of Townsend, Arnold & Co , at the corner of Hayne and Meeting streets. His mother was Mary Selena, daughter of the well-known Dr. John William Schmidt, who practiced medicine and surgery for many years in the city of Charleston.

Dr. Arnold was educated at Columbia College, in New York City, from which he was graduated in 1868 with the degree of A.B., subsequently (in 1871) receiving from the same Institution the degree of A.M. In 1869 he married Adeline Clinton Bleecker, only daughter of John Rhinelander Bleecker. In 1868 he commenced the study of medicine in the Bellevue Hospital Medical College, in New York City, entering the physiological laboratory of Professor Austin Flint, Jr., as a pupil and assistant, and was graduated in 1871 with the degree of M.D. In 1871 he was appointed Visiting Surgeon to the New York Dispensary for Diseases of the Skin. In 1872 he was appointed Professor of Physiological and Pathological Histology in the Medical Department of the University of the City of New York. Upon the resignation of Professor Henry Draper he was elected to the Chair of Physiology and Histo logy, which he held until the fall of 1882, when he resigned on account of ill-health, and the University conferred on him the title of Emeritus Professor—it is the only such title held by any one in the University. In 1872 he was appointed Curator to Bellevue Hospital, and subsequently held the same position to the New York Lunatic Asylum, on Blackwell's Island.

In October, 1882, when he resigned from the University, he moved to Thomasville, Georgia, hoping that the change of climate would be of some benefit to his health. In 1885, after a sojourn of nearly three years in Thomasville, he moved to Sewanee, Tennessee, and became Medical Officer of the University of the South at that place, and in August of that year he was called to the Chair of Chemistry, Geology and Mineralogy, in that Institution, which he filled for a little over a year, when he was again forced, on account of ill-health, to desist from lecturing. He subsequently (in 1887) occupied the Chair of Biology and Microscopy at the University of the South, teaching until August, 1888. For the last three years of his life he lived in Sewanee, practicing his profession in addition to his teaching.

From infancy he was always an invalid, being such a sufferer from asthma that almost all his education and reading was accomplished in his bed or arm-chair. Even during his boyhood he was deeply interested in the study of the microscope, and on entering his medical studies, with that indefatigable zeal which characterized his labors, he earnestly followed and investigated its application to physiological and pathological histology. As a teacher and contributor to microscopic research, he was well-known both in this country and abroad. His knowledge of the French and German languages greatly facilitated and enlarged his work, and enabled him to present his lectures abreast of the times. Keenly appreciative of the difficulties in making clear to a medical class many of the laws of physiology and physics, he was almost extravagant in procuring elaborate illustrations and mechanisms for demonstration in the lecture-room, never hesitating to expend nearly his entire means in purchasing from all sources the latest and most approved apparatus, that his lectures should be attractive, lucid and instructive, and as such they were appreciated by the hundreds of medical men and students who filled his class room.

Dr. Arnold died at Sewanee, Tennessee, on October 20th, 1888. He leaves surviving him his widow and two daughters. His mortal remains were brought to New York and were interred in the family plot in Greenwood Cemetery, Brooklyn.

Citric Acid in Milk.--Professor Soxhlet, a French chemist, has demonstrated that cow's milk naturally contains citric acid in an almost constant proportion of one gramme to every litre. A good animal yields, therefore, at a single milking, as much of this acid as is contained in two or three lemons, and the annual aggregate throughout an extensive dairying neighborhood must be something enormous. It occurs in the form of a calcareous salt.—*Druggist's Circular and Chemical Gazette.*

NOTES.

Trusteeing Drunkards.—The German Medical Congress has recommended that drunkenness be recognized as a reason for placing a person under trustees.—*Medical Record.*

Treatment of Irido-Cystitis.—Dr. Scōler, in addressing the Berlin Medical Society on the subject of irido-cystitis, cited several cases in which he had obtained rapid cure by injections of a solution (one to two) of salicylate of soda into the vitreous humor of the eye. The amount injected was only one division of a Pravaz syringe. The result was most gratifying in every case. The hypopyon quickly disappeared in every case. In one case slight pain followed the injection; this, however, was only temporary. Injections of a two per cent. solution of carbolic acid were also tried in similar cases, but gave negative results.—*Deutsche med. Woch.*

Pain in the Cicatrix of a Dog Bite in Peculiar Circumstances.—A patient called our attention to a very distressing peculiarity. Many years ago, when a child, she was bitten by a dog. No ill effects ensued until she commenced bearing children. During her confinements she usually has after pains, for which doses of morphine are administered. She has also a more intense pain at the site of the dog-bite, for which the doses of morphine administered for after pains are ineffectual, and it is only after larger doses of narcotics are given, repeated at short intervals, that the pain is overcome. There are no symptoms referable to the old bite at any other time. Can it be possible that there is any virus remaining in a dormant state in this old wound during all these years?

Pilocarpine in Deafness.—Dr. George P. Field has given some successful experiences in the use of pilocarpine in deafness. He says it does no good in cases of progressive deafness of old age, or that every patient taken haphazard is relieved by it, but in some cases it has done much good. It was first suggested by Professor Politzer. In doses of from ⅓ to ⅛ of a grain hypodermically at bedtime for six weeks. One physician, who thought he would be compelled to give up his practice because of deafness, expresses himself as being very thankful for restoration by use of it as above. Dr.

McNaughton Jones calls attention of the readers of the *British Medical Journal* to the fact that he announced the employment of pilocarpine after Politzer's experience in those cases where labarynthine effusions are threatened. He employed it in 1879 for labarynthine vertigo, and since, with some successes and some failures. As a reducer of hypertension and effusion, especially in ocular hypertension and effusion, when given in subcutaneoas cases, it stands unequalled.

PHYSICAL AND MENTAL CHANGES AFTER REMOVAL OF OVARIES OR UTERUS.—Dr. Glävecke, of Kiel, lately pulished a paper in the *Archiv f. Gynäkol.* on this subject. According to this author, the changes usually met with were those observed at the menopause. Menstruation permanently ceased immediately or shortly after the operation of removal in eighty-eight per cent. of the cases. In the remainder it was less frequent and more scanty. Practically no vicarious menstruation was observed. Menstrual molimina were observed in thirty per cent. In the time between the periods the familiar characteristic disturbances were observed—hot flushes, perspiration and faintness. He looks upon them as disturbances of the vaso motor system, in consequence of the cessation of the ovarian function, an observation, by the way, that does not throw much light on the subject. He does not remark the very long continuance of this most uncomfortable condition in many of the cases—four and five years. In four cases out of a total of forty-three, palpitation and headache came on, in one nausea, coming on several times a day, in another vomiting, in one diarrhœa, in one acne of the face lastsng over a year, and in two increasing weakness of intellect. Atrophy of the internal genitals was a consequence of the operation. In twenty-three cases in which the operation was performed for myoma uteri, distinct shrinking took place in the tumors in ninety per cent. In forty-two per cent. of the cases a distinct increase in weight, due to deposit of fat, was observed. Sexual desire was unchanged after removal of ovaries in only a few women. Both desire and pleasure were much diminished, but not in the same proportion in all cases. As regarded the psychical condition, almost always a depressed, low-spirited condition was remarked. Many women became melancholic, others showed a changeable and petulant disposition. Actual psychoses developed in three cases; two recovered in the course of a year, the third was incurable. The changes were different when the uterus was extirpated. Menstruation ceased, and no vicarious menstruation followed. Out of thirteen cases of total extirpation of the uterus strong molimina were observed in nine. If the ovaries were not removed atrophy of the external genitals did not take place. But little increase of weight took place after extirpation of the uterus. Sexual matters were almost unchanged, a slight diminution of sexual pleasure was acknowledged in a few cases. Psychically no change was observed in one half of the cases; in more than a third a melancholy so great as to constitute a psychosis was observed. On the whole, the bodily and mental changes after castration were much greater than after extirpation of the uterus.—*Medical Press.*

TREATMENT OF PRURITICAL AFFECTIONS WITH MENTHOL.—The analgesic properties of menthol render it valuable in diminishing the pain in pruritic affections, notably of senile pruritis, the pruritis of eczema, of itch, and also of urticaria. For this purpose the drug may be either prescribed as a tincture, a liniment or a salve.

1. Tincture or spirits of menthol:

℞.—Menthol	1 to 3 parts.
Alcohol (at 104° F.)	56 to 60 " —M.

Sig.—For external application to the affected parts.

2. Menthol liniment:

℞.—Menthol	3 parts.
Olive oil	30 "
Lanolin	30 " —M.

The action of this preparation is most efficient.

3.—Menthol salve:

℞.—Menthol	grs. xxxix.
Balsam of Peru	f ʒ jss.
Lanolin	℥ jv.—M.

—*Medical News.*

ECZEMA FROM CREOLIN.—On account of its having very little toxic action, Dr. Wackez used creolin as a dressing for wounds in children. Of 17 cases, in which there were slight wounds, 10 healed by first intention, while 7 speedily developed a local eczema. On the second day of treatment with creolin the vicinity of the wound was much reddened; on the third day small and large blisters appeared. The temperature was increased, and the neighboring glands were enlarged, the patients suffered from anorexia, headache, and sometimes vomiting. In order to decide whether these appearances were due to the creolin, or whether some of the other antiseptics might cause the same symptoms, an experiment was tried on a boy, six years old, who had fallen in the street, and had slight wounds on both hands. The abrasions of the right hand were treated with a creolin solution of 1 to 1000; those of the left hand with a 1 to 1000 of corrosive sublimate solution. On the third day an eczema appeared on the right hand; while on the left hand there was no trace of redness. The left hand was then treated with a three per cent. carbolic solution, while the creolin solution was continued on the right hand; on the next day the left hand showed nothing out of the way, while the epidermis of the whole palm of the right hand was covered with blisters. After opening the vesicles on the right hand the creolin was omitted, and the wounds were dressed with an ointment. The creolin solution was now applied to the left hand, and after three days ten small blisters appeared, which burst, and the epidermis came off about two days later.—*Therapeutisch. Monatshefte.*

TURPENTINE IN POST-PARTUM HEMORRHAGE.—A correspondent of the *Lancet* says: "For years I have used spirits of turpentine in post partum hemorrhage, and, in every case, with the best results. When the ordinary means, i. e., friction over the uterus, irritation of the uterus by introduction of the fingers, cold, hypodermic injections of ergotine, etc., failed, by saturating a piece of lint with the turpentine, and introducing it with my hand into the uterus and holding it against the walls, rapid contraction took place, and all hemorrhage instantly ceased. In one or two cases, when the patient was almost pulseless, it seemed to act as a stimulant. On no occasion did its action fail, nor did it cause the slightest inconvenience, except in one, when the side of the patient's thigh was slightly blistered by some that came in contact with it, but it gave very little annoyance. I consider it to be much quicker and safer in its action than any other remedy; it does not cause any injurious result, and, besides, it is much more easily applied. In country practice, getting hot water, or using injections often entails loss of valuable time."—*Practice.*

MEETING OF THE INTERNATIONAL MEDICAL CONGRESS.—We, the undersigned, do hereby give notice that, according to the resolution passed at the Washington meeting, September 9th, 1887, the 10th International Medical Congress will be held in Berlin. The Congress will be opened on the 4th and closed on the 9th day of August, 1890. Detailed information as to the order of proceedings will be issued after the meeting of the delegates of the German Medical Faculties and Medical Societies at Heidelberg on the 17th of September in the current year. Meanwhile, we should feel sincerely obliged if you would kindly make this communication known among your medical circles and add in the same time our cordial invitation to the Congress.

VON BERGMANN,
VIRCHOW.
WALDEYER.

THERAPEUTICS OF RHEUMATISM IN CHILDREN.—Dr. William H. Thompson said that many years ago his attention had been drawn to the ætiology of rheumatism, he being then a medical student in Syria, and hearing from his father (then engaged in explorations) what seemed to him paradoxical statements relative to the prevalence of rheumatism among the Arabs of the desert. He had heard that acute rheumatism was as common a disease among the Arabs in the arid country south of Palestine as among the fishermen of Norway and Scotland. He had asked himself then and since what reason there should be for the appearance of a disease either identical or similar among peoples living under apparently opposite conditions of life, in respect to weather—that is, in climates presenting the extremes of warmth and dryness and a never-clouded sky, on the one hand, and incessant fog, rain and chilly winds on the other hand. He had become satisfied that the cause of rheumatism in either case must be a common one, but not the same as the cause of gout, for gout was nowhere to be met with in Mohammedan countries, unless in the few sections where alcohol was used (as in parts of India, where a drink made from fermented rice was drunk); at least it was very rare. It was safe to prémise that rheumatism, so far as climate was concerned in its causation, was connected with changes in temperature, while gout was the outcome of excesses in the diet and in the use of fermented liquors. What, then, was there in common in the conditions of the life of a man living in a tent in a burning climate, never having enough water, and a fisherman on the shore of the Baltic, drenched with water most of the time? He would answer, Chilling of the skin when moist. This might occur as well in the deserts of Syria as in lands covered with fog half the year round. In the desert there was great heat during the day, the sand became heated as if in an oven, and when a party of travelers lay down to sleep, some time after sundown, on this warm sand, they were in a profuse perspiration, and naturally provided themselves with little in the way of coverings. But the sand radiated its heat very rapidly into the cloudless sky, and before sunrise bitter cold would succeed the heat of the evening. Consequently the wet skins of the uncovered sleepers became badly chilled; and that rheumatism should follow such exposure was most natural. He had heard his father say that he had never suffered more from cold than just before dawn at the base of Mount Sinai. No one should attempt to diagnosticate the early stage of rheumatism by an examination of its articular habitat, a joint. A swelling in a joint might be due to gout, trauma, gonorrhœa, or rheumatism; the symptoms in the joint were the same in each case, and so many mistakes were made. Examine the pulse, and no one familiar with the contrast presented by rheumatism and gout in this respect should fail to determine whether it was rheumatism which the patient had in the joint, or gout affecting the heart and arteries. In scarlatinal rheumatism the pulse was often hard, and there was often much uric acid present in the blood and urine; sometimes there was a formation of pus and true textural changes, which were absent in simple rheumatism, and often pyæmia was developed. He was inclined to believe in the existence of some yet unknown function of the skin connected with respiration in its widest sense; he thought that a failure of skin-action of some sort was a means of causing the accumulation in the body of the matters which were morbific of rheumatism. Quinsy and acute articular rheumatism were sometimes associated, the latter following the appearance of the former. In the genesis of rheumatism there was usually a chilling of the skin, so naturally the warm bath acted as an anæsthetic; moreover, any bath rendered the urine alkaline—even a vinegar bath. Flannel had a peculiar usefulness from first to last. Oily inunctions, and especially inunctions of cod-liver oil, were advisable for the same reasons. This oil had first been introduced as a remedy for chronic rheumatism, and he himself placed great reliance on its effects, both externally and internally. As to the connection between rheumatism and endocarditis in children, he fully concurred in Dr. Jacobi's warning lest it might be overlooked. Endocarditis, he wished to state emphatically, might occur with only the most insignificant indications of rheumatism. He had recently seen a fine boy suffering from only a moderate attack of arthritis with the temperature between 99° and 100°, or else normal; the disease had been contracted by sitting on the ground while watching a game of ball. In spite of all he could do, endocarditis had come on in thirty-six hours, and it would probably leave him with a permanently crippled heart. To prevent injuries to the heart in children, contracted in this way, we must be on the lookout for the preceding rheumatism, and especially if chorea appeared, which was the normal order in the development of rheumatism in children, the articular affection coming subsequently. He dreaded "growing pains," and put a child on the use of cod-liver oil at once when they were complained of. As prophylactic measures he would advise the application of suitable oils to the skin and the wearing of flannel both summer and winter. As regarded the therapeutics proper to a case of endocarditis, he had no faith in the power of salicylic acid, either in treatment or prevention; it was useful in articular disorders, not where the heart was involved. Antipyrine or phenacetine was preferable. But, it might be asked, Why should the heart have this peculiar liability to develop severe lesions during an attack of rheumatism? When rheumatism invaded other parts and structures in the body, it did not produce such injuries, or anything like as severe ones. If we found a joint in a state of redness, pain and swelling, such as rheumatism produced, we should say the prognosis was bad unless the attack proved to be rheumatic, for in that case the symptoms would pass away. If such a joint was examined just after death, it presented few indications, or, perhaps, none whatever, of the inflammatory process recently so active in it, whereas the heart did present permanent structural lesions. The explanation of this difference could be derived from a consideration of the unresting nature of the heart, and the necessarily intensified action of the rheumatic poison on the wall of a serous cavity subjected to such constant mechanical strain. If a man having rheumatism in his knee should kick a hundred and forty times in a minute, he would probably cause the development of structural changes which would remain for life; consequently, the importance of compelling the heart to beat slowly. In children the heart-beat was much more rapid than in adults; and, correspondingly, heart complications in rheumatism were more likely to be developed. He therefore recommended full doses of aconite, and not of digitalis. Aconite allayed the irritability of the heart; also alkalies were to be given; and finally the utmost care exercised to protect the chest, so that no chilling of the sensitive cutaneous nerves should occur; especially should the chest area overlying the heart never be bared of covering.—*New York Medical Journal.*

DEATH OF ALEXANDER MOTT, M.D.—Dr. Alexander B. Mott, the fourth son of the late Dr. Valentine Mott, died at his country-seat, at Yonkers, on the 12th of August. The cause of death was pneumonia, and he was ill only two days. He was born in the city of New York, March 21, 1826. A considerable portion of his boyhood and youth was spent in Europe, but he returned to this country to begin the study of medicine in his father's office. He attended lectures successively at the University Medical School, New York, Castleton, Vt., and the New York Medical College; and in 1850 he was appointed Surgeon to the New York Dispensary. His first hospital appointment was at St. Vincent's Hospital, of which he was one of the founders, and he was Surgeon to Charity Hospital for fourteen years. In 1857 he received the degree of M.D. from the University of Pennsylvania.—*Boston Medical and Surgical Journal.*

THE TREATMENT OF OZENA WITH GLYCERINE.—At a recent meeting of the Society of Military Surgeons in Vienna, Dr. Sidlo stronly recommended the treatment of ozena with glycerine. His method consists in daily washing out the nasal cavity with a two per cent. solution of potassium, to which ten per cent. of glycerine has been added. This is followed up with the insertion of rolls of cotton soaked in a mixture of one part of glycerine and three parts of water, the tampons being allowed to remain in place for an hour at a time. Using this method, he claims good success in the management of ozena. The method requires some weeks to effect a cure; but no one who has treated ozena often will think a few weeks too long to devote to any method which is likely to be successful. The one proposed by Dr. Sidlo is so simple, and apparently so rational, that it certainly seems worthy of further trial, and if other medical men can cure such cases as he has cured in this way, it will be a very useful addition to our therapeutic resources.—*Medical and Surgical Reporter.*

THE MAYBRICK CASE.—The following is the opinion of Arthur Pearson Luff, M.B., B.Sc.Lond., Lecturer in Medical Jurisprudence and Toxicology, St. Mary's Hospital: "A careful analysis of the evidence given in this *cause célèbre* can leave little doubt but that the verdict is a just one. It appears that about the middle of April of this year Mrs. Maybrick purchased some fly-papers, since proved to contain arsenic, and of which it is known she prepared an aqueous extract. On April 27th the deceased was seized with vomiting, which came on after taking tea. On April 28th he still suffered from vomiting, with foulness of the tongue, and also complained of stiffness in the lower limbs. On May 1st deceased partook of some luncheon, consisting of a preparation of revalenta arabica, which preparation had been brought to his office by his brother, who had received it from Mrs. Maybrick, and after partaking of it he complained that he did not feel well. On May 3d he was sick twice after returning home. On May 4th he complained of a tickling sensation in the throat, accompanied with retching. Between May 4th and 6th he took, by order of his medical attendant, part of a mixture containing a small quantity of Fowler's solution (the whole quantity contained only 1-250th of a grain of arsenic, and a portion of this medicine was thrown away unused by the medical attendant on May 6th). On May 7th deceased was still suffering from vomiting, diarrhœa was just appearing, and the throat was dry and acutely inflamed. On May 8th he was suffering from diarrhœa, with considerably straining. On May 9th distressing tenesmus was present. On May 10th the tenesmus was better, but not absent, and the patient was sinking. On May 11th he died. The post-mortem exemination indicated acute gastro-intestinal irritation. The chemical analysis showed the presence of arsenic in the intestines, liver, kidneys and spleen, but none was found in the stomach and pelvic bone. The symptoms preceding death, the post-mortem appearances, and the results of the chemical analysis clearly indicate that death was dne to arsenical poisoning. For the defence, stress was laid on the fact that petechiæ were absent from the mucous membrane of the stomach; this absence is explained by the fact that in all probability the arsenic was taken in solution, and also by the fact that all arsenic had passed away from the stomach by absorption, by passage into the intestines, and by vomiting. Three bottles containing a quantity of arsenic, both in the solid state and in solution, were found in the house, together with a package consisting of arsenic and charcoal. Arsenic was also found in a bottle of medicine in which it was not prescribed, and traces were found in a pocket of Mrs. Maybrick's dressing-gown, and on a handkerchief bearing Mrs. Maybrick's name contained in this pocket. Arsenic was found in solution in a bottle of Valentin's meat-juice, which had been seen in Mrs. Maybrick's possession under somewhat suspicious circumstances. The prisoner in her statement admitted that she had put arsenic in the form of a powder into this bottle at her husband's request, but the fact of its being found in the bottle in a state of solution points strongly to the inaccuracy of the prisoner's statement. It is strange that the counsel for the defence did not call evidence in support of her statement that she had been accustomed for years to use arsenic as a face-wash, since on her own declaration this was known to 'many young friends in Germany, and to her mother for many years.' The defence endeavored to show (*a*) that the arsenic present in the body was the result of a habit of taking arsenic acquired years before by the deceased in America, although no recent evidence as to the purchase or taking of arsenic by the deceased was produced; (*b*) that the cause of death was from gastro-enteritis induced by something other than arsenic. Bad sausages, fish and cheese were mentioned in evidence as possible inducing agents of such irritation, but no evidence was produced that the deceased had partaken of any of these things; the only positive suggestion that was made was that the gastro-enteritis was produced by catching cold, a most improbable result under the circumstances.—*British Medical Journal.*

GIVE THEM MUSTARD BEFORE YOU GIVE THEM CHLOROFORM, AND SOMETHING ELSE ABOUT MUSTARD.—One of our friends who is doing some very good capital surgery among the negroes, at a financial outgo to him of all the way from $5 to $10, for surgical appliances and dressings, is also taking some lessons in the character of the darkey. He always directs that they shall eat no breakfast, and, satisfied with their affirmative answer, he puts them on the table, to find that as he gets well into his operation he has to wait until vomiting has ceased--the process always revealing a pretty full stomach. He thinks he will settle the matter hereafter by giving a dose of mustard and water preliminary to the administration of the anæsthetic. *A propos* to the administration of mustard as an emetic, the writer saw a woman patient, a few days ago, to whom was administered mustard as an emetic in attempted laudanum poisoning. It acted promptly and efficiently, but the young physician whose case it was, was greatly amused that, even in the midst of the vomiting, the patient was complaining of hunger, and when we left the house we left the patient safe from the danger of the narcotic, with the shanty redolent with the smell of frying meat, a-cooking for the would be suicide.

POST-GRADUATE INSTRUCTION began in St. Louis, at once initiated in New York, very tardily in Philadelphia and elsewhere, has at last reached staid old London, so we take back all we had to say in opposition to it some years ago. There is nothing more advantageous to the hard-working doctor than a post-graduate course at the right place, and in saying this we do not except a good medical journal.

LEPROSY IN THE UNITED STATES.—The President of the Board of Health of California, in making enquiry into the number of cases of this dread disease in the United States. We trust that the result of his enquiries will be towards the complete isolation of every case, by pressing the question home to the public. It is all well enough for ambitious dematologists to gather up cases, in order to show the novelty to wondering students, as far as effect is concerned, but it is imperilling the country, it is true, in an unknown degree, but certainly in some degree, and the firm hand of the law ought to be laid on all such rash procedures.

RUNNING RANGE—RUNNING REINS.—Nich: Culpepper, in his "English Physitian Enlarged," etc., 1653, answers a question which we were unable to make to a friend and enquirer: What do the negroes mean by "running range?" We always had dimly associated the term in the usual jocular way with a gonorrhœa by another name, but very aptly ascribed to a "running of the range." It seems, though, that this was fanciful and old, and as sharp a charlatan as New York or Chicago could boast of to this day, speaks of "running of the reins," or gonorrhœa. The pathology involved in this nomenclature may be surmised. But how the darkeys got hold of this phrase, behind which they seek to cover their virtuous condition, remains unexplained.

The filthy stuff which the suggestion of Dr. Brown-Sequard has drawn forth from the secular press, is humiliating in the extreme, but serves as a good index for those who have not already thought upon the matter, to determine what newspapers are fit to come into the household. What with advertisements of cures for dysmenorrhœa, spermatorrhœa, and prurient nastiness of all sorts from police courts and elsewhere, it is evident that the selection of a clean newspaper would puzzle most any parent.

Centennial Catalogue of the University of North Carolina.—This is considerably more than an ordinary catalogue: In addition to the lists of names of officers and students (1789–1889), it contains an interesting and valuable historical sketch, covering 63 pages, by President Battle, with 11 full-page plates. The catalogue proper gives, very concisely, the leading facts in the life of each student, graduate and non-graduate, so far as these facts could be ascertained by the compiler, Mrs. C. P. Spencer, who has done her work with rare skill. It is an array of famous names such as institutions in the United States can produce—names of men who have brought fame to North Carolina and the whole country, as well as to their Alma Mater at Chapel Hill. The catalogue is really a good-sized book of 250 pages, and is by far the handsomest publication of the kind that we have seen. The Bursar of the University, Major W. T. Patterson, will forward a copy on receipt of 50 cents.

"Homœopathy has also profited, and is still profiting, wherever the English language is spoken, by an accidental misleading resemblance of the term hmoœ to the precious word home—'Home, sweet hlme.' To you as a physician the term homœopath naturally signifies a person who practices a certain dogmatic and visionary system. But to many of the laity, on the contrary, the first two syllables of the word suggest that he practices a simple *home* or domestic system of medicine, and the fact that he ordinarily prepares his own globules, solutions, etc., either at his own home or at the homes of those who employ him, instead of sending prescriptions to drug stores, as we do, add strength to this popular error."—CATHELL, *in The Physician Himself.*

DR. E. J. OVERENB (*Pacific Med. Journal*) states that his personal experience with caffeine in sick headache, after a large experience with other drugs, is that it is almost as much a specific in that disease as quinine in intermittent fever. He is especially enthusiastic in regard to its prophylactic powers in doses of two to five grains, hourly, in capsules.—*College and Clinical Record.*

TREATMENT OF ECZEMA.—The great desideratum is the appropriate external treatment. Dr. Mackintosh gives the following as an ointment which in most cases pretty nearly approaches the character of a specific:

℞.—Bismuthi subnitratis, ʒ iv.
Zinci oxidi, ʒ i.
Acidi carbolici liquidi, ʒ ss.
Vaselini albi, ℥ ii.
Ft. ung.

Or

℞.—Bismuthi subnitratis, ʒ ii.
Zinci oxidi, ʒ ss.
Glycerini (Price's), ʒ iss.
Acidi carbolici liquidi, ♏xx.
Vaselini albi, ʒ vi.
Ft. ung.

The latter ointment mixes into a beautiful enamel-like cream, which is cooling, and acts as a balm to the irritable skin.

When constant tingling and irritation disturb the patient's rest at night, this lotion is said to be invaluable:

℞.—Bismuthi subnitratis, ʒ i.
Glycerini (Price's), ʒ iv.
Acidi carbolici liquidi, ♏xii.
Aquam rosæ, ad ʒ i.

Sig.—Shake up, and apply with a camels-hair pencil.

BOOKS AND PAMPHLETS RECEIVED.

Prospectus of the St. Louis, Mo., College of Pharmacy.

Twelfth Report of the State Board of Health of Wisconsin.

Hog Cholera, by the Bureau of Animal Industry, Washington, D. C., 1888.

Wood's Medical and Surgical Monographs. Vol. III., No. 2, August, 1889.

The Annual Report of the Department for the Insane of the Pennsylvania Hospital.

Boston University School of Medicine. Seventeenth Annual Announcement and Catalogue, July, 1889.

The Physician Himself, by D. W. Cathell, M.D., published by F. A. Davis, Philadelphia. Price $2.00. Pp. 298.

Transactions of the Southern Surgical and Gynecological Association. Vol. I. Session of 1888. Birmingham, December 4 to 6th.

Experience in the Treatment of Trachoma, by A. E. Prince, M.D., Jacksonville, Ill. Read at the meeting of the Illinois State Medical Society, at Jacksonville, Ill., May 23 to 25, 1889.

Annual of the Universal Medical Sciences, Five Volumes. Issue of 1888. Edited by Charles E. Sajous, M.D., and Society Associate Editors. Published by F. A. Davis, Philadelphia.

University of Pennsylvania Catalogue for Session of 1888–'89, and Announcement for Session ot 1889–'90. One Hundred and Twenty-fourth Annual Session. Department of Medicine.

Pathology and Treatment of Alopecia Areata, by A. R. Robinson, M.B., L.R.C.P., and S. (Edin.). Reprinted from the "Transactions of the Ninth International Medical Congress." Vol. IV.

Annual Catalogue and Announcement, with an account of the new buildings of the College of Physicians and Surgeons in the city of New York, Medical Department of Columbia College.

Baltimore University, School of Medicine, Annual Announcement, Session of 1889–'90.

The Proceedings of the Sixth Annual Meeting of the Ohio State Sanitary Association, held at Canton, November 14–15, 1888.

On Spasmodic Urethral Stricture from Anal Fissure, by L. Bolton Bangs, M.D., Surgeon to St. Lucas and Charity Hospital, N. Y.

Circular for Session of 1890 of the Central University of Kentucky, Medical Department Hospital College of Medicine, Louisville, Ky.

The Question of Interfering with the Abscesses of Hip Disease, by A. B. Judson, M.D., Out-Patient Department of the New York Hospital.

On the Value of Frequently Repeated Doses of Arsenic in the Treatment of Bullous Diseases of the Skin, especially in Children, by L. Duncan Bulkley, A.M., M.D., New York.

Pelvis and Abdominal Drainage, by David Prince, M.D., of Jacksonville, Ill. Reprint from the Transactions of the American Surgical Association of 1888, and from the Annals of Gynecology, December, 1888.

Is More Conservatism Desirable in the Treatment of the Joint Diseases of Children? by A. B. Judson, M.D., Orthopedic Surgeon to the Out-Patient Department of the New York Hospital. Reprint from the *Medical Record*, May 18, 1889.

The Heating and Ventilation of the Mansfield, Ohio, Schools and Churches, by R. Harvey Reed, M.D., Secretary, Ohio State Sanitary Association. Reprint from "The Journal of the American Medical Association." April 6, 1889. A Lecture delivered before the Mansfield Lyceum, February 13, 1889.

The Sewerage ef Cities and Towns. Reprint from North Carolina Board of Health Report, 1888, and How Can we Best Economically Dispose of the Refuse of Our Towns. Regrint from Proceedings of North Carolina Sanitary Association, meeting of February 6–7, 1889. Raleigh, by J. L. Ludlow, C.E., M.S., C.E. to North Carolina Board of Health, Winston, N. C.

READING NOTICES.

Chronic Pulmonary Catarrh.—J. S. Swain, L.K.Q.C.P. and L.R.C.S., 37 Park Lane Terrace, London, England, says: "I have used S. H. Kennedy's Extract of Pinus Canadensis in the following case: Mr. C., aged about 35, suffering from chronic pulmonary catarrh, with pain in left side and great expectoration, cough paroxysmal and lasting some minutes; gave Extract Pinus Canadensis internally; after second bottle the expectoration was less, pain in side left, and felt more in throat, and he coughs less, and feels better in himself.

Messrs. Reed & Carnrick:—*Gentlemen*:—In recognition of the courtesy shown us by your invitation to visit your laboratory at Goshen and personally observe the several successive steps in the process of preparing your *Soluble Food*, we desire to express our thanks. We were very forcibly impressed with the precaution exercised in obtaining practically sterilized and partly digested milk, and the absolute cleanliness observed throughout the entire process. We unhesitatingly endorse your *Soluble Food*, and shall continue prescribing it for our babies: Edward Molitor, M.D., Somonauk, Ill.; J. Gill. Allan, M.D., Shelbyville, Ky.; J. D. Herrmann, M.D., Eastman, Ga.; S. T. Turner, M.D., El Paso, Tex.; J. I. McConnell, M.D., Chattanooga, Tenn.; J. C. B. Justice, M.D., Asheville, N. C.; B. Z. Henslee, M.D., Dickson, Tenn.; W. G. Ferguson, M D., Hughesville, Mo.; J. H. McDuffee, M.D.; Keyser, N. C.; W. H. Hudson, M.D., La Fayette, Ala.—*N. Y. Polyclinic School.*

There is no other exhibit of the class in the United States section to rival that of Wm. R. Warner & Co. From the globe-advertising Philadelphia merchant comes an exhibit which the native pharmaciens can look at with both admiration and wonderment. The display is enough to make any Frenchman curious, and their arrangement such as to be above deprecatory criticism; and those Frenchmen there could not be a people with better taste for the proper and harmonious exhibition of products. A glance through their own magnificent section of pharmacy will verify this. Readers would find superfluous a description in detail of the Messrs. Warner's essentially fine installation covering all their soluble sugar-coated pills, salts, etc. Suffice it to remark that at the Paris Universelle their exhibit is thoroughly representative, comprises all the makers' fabrications, and is decidedly an honor to the concern.—*Pharmaceutical Record.*

NORTH CAROLINA MEDICAL JOURNAL.

THOMAS F. WOOD, M. D.,
GEO. GILLETT THOMAS, M. D., } **Editors.**

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ORIGINAL COMMUNICATIONS.

A CASE OF CÆSAREAN SECTION.

By J. M. Hays, M.D., Oxford, N. C.

On Friday, June 28th, I performed Cæsarean Section on Tishy Curtis, a negro woman æt. 34, living in the country, about nine miles distant from this place.

History.—She had previously been delivered of four dead children. My esteemed friend, Dr. J. W. Booth, has furnished me with the following facts in regard to these labors :

Tally-Ho, N. C., July 9, 1889.

Dear Doctor :—Yours of yesterday to hand. I am acquainted with Tishy's family from her grand-parents on both sides. There has been no mental derangement on either side. Tuberculosis in her father's family. In her first labor the breech presented; it was a small child, and I delivered it with difficulty by traction on the body—dead. In fact, the body was born before I arrived. In her second labor the breech, or shoulder (I forget which), presented; but after pulling the head off the latter was delivered with very great difficulty. Whether it was perforated or not, I forget. In the third labor the deformity at the promontory of the sacrum had increased so much that the head had to be perforated, which was done by Dr. S. D. Booth. The shoulder presented in the fourth labor. After I had turned the child, Dr. S. D. Booth got the blunt hook in the mouth and made traction on the hook, while I drew on the body. Thus we delivered it, the promontory of the sacrum cutting or mashing its way through the skull. It seemed like barbarous midwifery, but I don't see how we could have done better, and she did well after it.

Tishy did not walk till she was five years old.

Yours very truly, J. W. B.

I will state here that the patient had been instructed after each of her confinements that any subsequent labor would endanger her own life and be almost sure death to the child. She had also been urged to notify her physician, should she become pregnant, so that he might induce premature labor—say at the seventh month. These instructions, however, were disregarded, and Dr. J. W. Booth, her family physician, was not informed that she was pregnant until a few weeks before this confinement. He then notified his brother, Dr. S. D. Booth, and myself, that he wished us to perform the Cæsarean section, as he was not willing to kill any more of her children. We urged that the operation be done a few days before her expected labor, but this was refused by the patient and her husband.

Upon the outset of the labor Drs. J. W. and T. L. Booth were sent for. Upon their arrival the os was found to be dilated. They at once telegraphed for Dr. S. D. Booth and myself, and we proceeded to the place without delay, Mr. L. B. Grandy, a student of the College of Physicians and Surgeons, New York, accompanying us. We arrived at the house about noon, and ascertained that labor had been in progress since about 5 o'clock, a. m. The bag of waters had broken about an hour previous to our arrival, and strong labor pains were now following each other at intervals of a few minutes.

The patient was given a hypodermic of morph. sulph., gr. ¼, and a rectal injection of Viburn. Prunif., ʒj, chloral hydrate, ʒss. An examination revealed the fact that there was considerable shortening of the conjugate diameter of the pelvis, produced not only by a bulging forward of the sacral promontory, but also by a recession of the pubes. This condition was readily appreciated by all of us. Dr. J. W. Booth stated that the deformity had progressed considerably since her last confinement, and had now become so great that it would not be practicable to extract even a mutilated child. Evidently, then, we had here a very badly deformed, figure-of-eight (∞) pelvis, with the antero-posterior diameter of the inlet less than two inches. The woman was strong and healthy, had been in labor only a few hours, and all of us believed that the Cæsarean section was the only rational procedure.

Operation.—The patient was chloroformed and placed upon two kitchen tables, which served us as an operating table. The mons veneris having been shaved, the abdomen and genitals were washed with soap and water, followed by ether and a solution of bichloride of mercury. A hot carbolized vaginal douche was also used. The instruments, sponges, ligatures, etc., were all thoroughly sterilized, as were my own hands and arms and those of my assistants. In short, every aseptic and antiseptic precaution was observed. Dr. J. W. Booth managed the anæsthetic throughout. Drs. T. L. Booth and Grandy supported the knees and attended to the sponging, while Dr. S. D. Booth acted as my right-hand man, assisting me most skilfully in many ways. I will state that before the operation was begun a hand and arm (the right) presented in the vagina. Sänger's operation was the one selected. I began by making an incision from the umbilicus nearly to the symphysis, dividing the peritoneum upon a grooved director. Finding this incision insufficient to admit of the gravid uterus being turned out, I enlarged it about three inches upward to the left of the umbilicus. The uterus was then seized and lifted out, and a rubber cloth, prepared for the purpose, placed under it to protect the peritoneum. The intestines were controlled by flat sponges in the hands of one of my assistants. The uterus was then laid open, and an asphyxiated female child, of average size, extracted. There was a very prominent, but narrow, caput succedaneum, on the right parietal bone. Dr. S. D. Booth took charge of the child, and resuscitated it after about fifteen minutes of persevering effort. The placenta was delivered at once without difficulty. An hypodermic of ergotine was given at this time. There was very little hemorrhage from the placental site or from the wound, but as uterine contractions were rather tardy, they were stimulated by the introduction through the wound of sponges from very hot water. Two of these applications were followed by rigid tonic contractions and cessation of hemorrhage. The uterine wound was brought together with twelve interrupted silk sutures. I now covered this wound entirely by bringing together the divided peritoneum over it, *inverting* at the same time the free edges of the peritoneum, as in the Lembert intestinal suture.* I made eleven of these superficial, intermediate sutures. The rubber cloth was then removed, and the peritoneal toilet most scrupulously made. This was scarcely necessary, however, as this cavity was almost perfectly clean. The uterus was now replaced, and the edges of the abdominal wound brought together with twelve deep silver wire sutures (not made to include the peritoneum) between which I passed a sufficient number of superficial silk sutures to bring the wound into perfect apposition. There was absolutely no gaping of the wound at any point. Iodoform was abundantly used over the whole extent of the wound. Aseptic cotton was then applied, and this was held in position by a snugly-fitting rotten bandage. The patient was then placed in bed—pulse 110, respiration normal.

The entire operation consumed something less than an hour. I wished to remove the ovaries during the operation, but this was objected to by my colleagues, and was abandoned.

After Treatment.—A hypodermic of morph. sulph., gr. ¼, atrop. sulph., gr. 1-150, was now given. Before we left the house the patient expressed herself as feeling very comfortable, and made anxious inquiries about what she should be allowed to eat. Dr. Grandy kindly consented to remain with the patient, and from this point I shall follow his notes, taken at the bedside. The patient rested quietly during the night, showing only slight restlessness at intervals. During the twelve hours of the night three hypodermics of morph. sulph., gr. ¼, were given. Temperature and pulse remained 100 and 129. respectively, throughout the night. On Saturday morning (29th) she awaked, and stated that she was entirely free from pain, and was hungry. Chicken broth was allowed her, which she ate with evident relish. During the day the patient at no time complained of discomfort, and talked intelligently with the doctors, her husband and the nurse. Beginning at 6 a. m., quin. sulph. gr. viij, was given every three hours until thirty-two grains were given. At 3 p. m. temperature 99.3, pulse 120. Chicken broth and milk and brandy were given frequently during the day, being only occasionally rejected. Drs. J. W. and T. L. Booth visited the patient to-day.

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*This I regarded as an improvement upon the Sanger method of suturing the uterus, and equally efficacious in preventing intra-peritoneal hemorrhage. I thought this was an entirely original method, at the time, but now believe that other American operators, Garrigues among them, have followed the same plan.

On Saturday night and Sunday the clinical record varied little from the above, the patient remaining quiet and restful. Quinine and nourishment were given as on preceding day. Patient was to-day (Sunday) very anxious for solid food. At 3 p. m. temperature normal, pulse 108. This afternoon I visited the patient in company with Drs. J. W. and T. L. Booth; we found everything satisfactory, and gave a favorable prognosis. Dr. Grandy returned with me to Oxford, Dr. T. L. Booth taking charge of the patient for the present. Beginning at 6 p. m. a capsule containing quin. sulph., gr. viij, morph. sulph., gr. ¼, was given every six hours, until four were taken.

At 4 o'clock, Monday afternoon, all of us returned to the patient's house, and found that she had been doing well during the day. At 8:30, a. m., temperature normal, pulse 90. We were at the house about half an hour, during which time patient was quiet, conversing intelligently. About an hour after leaving, patient became very restless and unmanageable, whereupon Drs. T. L. Booth and Grandy were hastily summoned. Upon arrival they found the woman delirious—talking wildly and very restless. In a few minutes she became more quiet, and remained so until about 9 o'clock, when she was again seized with a paroxysm of delirium (or mania ?). Morph. sulph., gr. ¼, was given, which produced a sound sleep, lasting nearly two hours. The benefit thus produced, however, was wholly temporary, for when she awaked she was even more restless and talkative than before. She was now disposed to move aimlessly about on the bed, and made repeated efforts to get up. These movements were prevented only by the forcible restraint of her attendants, the narcotics administered proving entirely ineffectual. An hypodermic of morph. sulph., gr. ¼, atrop. sulph., gr. 1-30, was given (about 11 o'clock), followed in about an hour by svapnia, gr. j, per orem, neither of which produced any appreciable effect. In about another hour, or perhaps a little longer, the hypodermic injection was repeated, and at 2 : 15 o'clock another grain of svapnia was given. The patient still remaining wakeful and restless, at 3 : 15 another injection of morphia and atropia was given, about one-fourth of the solution remaining in the syringe, unused. At 4 : 30 o'clock she fell into a quiet sleep, which lasted little more than an hour.

On Tuesday morning I received this telegram : "Tishy maniacal, talks incessantly." I reached patient's house at 4 p. m., and learned from Drs. Booth and Grandy, who had been with her during the day, that she had had short periods of sleep, between which were intervals of restlessness and incoherent jabbering. She was now evidently in a profound state of narcosis, from which I was unable to arouse her. Her pupils were greatly contracted, skin moist, pulse 160, respirations 36, temperature normal. Upon learning the amount of narcotics administered during the previous night I at once suspected that I had to deal with opium-poisoning. All my colleagues in the case were now present, except Dr. S. D. Booth, who was detained by sickness, and coincided with me in this opinion. About this time we observed that she stopped breathing, and at once atrop. sulph., 1-50, was given and artificial respiration practiced. The latter had to be done every few minutes for something more than half an hour. These cessations of breathing did not materially affect the pulse. Up to 8 : 30 o'clock the intervals between periods of suspended breathing gradually lengthened, and beginning about this time the last interval was seventy-seven minutes, without suspension. Pulse now 150, respiration rapid, but uninterrupted. At 9 : 30 o'clock, as narcosis was still profound, and patient again in profuse perspiration, atrop. sulph., gr. 1-100, was injected. From time to time brandy was administered hypodermically and by mouth. Strong coffee was also given. The pulse was now quicker, with more volume and less force.

At 10 o'clock three or four nitrite of amyl pearls were used, with marked effect, upon her respiration, though this was not lasting. Soon after this the patient seemed to rally a great deal, and apparently continued to improve for about two hours. She became more conscious, and upon being called would open her eyes, and seemingly make efforts to speak. Her conjunctivæ now became sensitive, and she made voluntary movements of her limbs. The coffee and other stimulants which were being given were readily swallowed. Her pulse remained rapid and of small force, so she was given, at 12 : 30 a. m., 15 minims of tincture digitalis under the skin. Her condition at 1 o'clock was very encouraging, but this soon changed, and she passed again into a still more profound coma. However, there continued to be intermissions of apparent improvement for several hours. Her skin was uniformly moist, except for a short while after atropia was used. At 1 : 30 o'clock her temperature was observed to be on the rise, being now 103.5. At 2 : 15 another 15 minims digitalis was given, and at 3 o'clock atrop. sulph., gr. 1-75, was injected. The temperature had risen to 104.8 by 5 : 30 o'clock, and at 9 : 00 it was 105, which was maintained till the end.

On Wednesday morning the ice-pack was applied to the head, and other measures adopted to reduce the temperature and sustain the failing strength of the patient, but everything was unavailing, and the patient died at 11 : 20 o'clock. The heart continued to beat after respirations ceased.

Autopsy.—A general autopsy was refused. The husband, however, consented to an inspection of the parts involved in the operation. These were examined at once, and to our gratification found to be in a perfect condition of asepsis. No odor had been detected during the life of the patient, and now the abdominal wound showed not the slightest trace of septic infection. In fact, the wound was uniting nicely throughout its whole extent, by first intention. There had been no hemorrhage into the peritoneal cavity, and the peritoneum showed no sign of inflammation whatever. The uterine wound was absolutely clean, and perfect union had taken place. In fact, it was quite impossible, under the conditions observed, for septicæmia or peritonitis to have supervened. The deformity of the pelvis, as previously described, was now verified. The conjugate diameter would not admit the passage of any index and middle finger, being less than two inches.

REMARKS.

The question as to the cause of death in this case is a most interesting one. I shall not go into a lengthy discussion of this question, but shall limit myself to suggesting briefly several possible causes which have occurred to me in studying the subject. Primarily the question arises. Was the mania the first of an orderly series of symptoms of a condition which finally caused death? This I am now disposed to answer in the affirmative, though I confess that I thought at the time of my attendance upon the case that opium played an important part in bringing about the fatal issue. It will be noted, however, that 1 grain morphia had been administered during eighteen hours, extending through Sunday night, with the most pleasant effect. After mania supervened Monday, p. m., only 1 gr. morphia, with 2 grs. svapnia, was given during the night, and nothing approaching coma was observed until twelve hours after the last dose. During this period she had "intervals of restlessness." I feel sure, therefore, that the opiates could have had no ill effect whatever, and that the symptoms which so closely resembled those produced by this drug were due entirely to some other cause. That *death* was dependent upon this drug is, of course, out of the question. The same may be said of the 1-28 gr. atropia which was given during the eighteen hours preceding death. Was it septicæmia? I do not believe it was. The autopsy satisfied us that such a condition was almost impossible under the circumstances. During the years of 1883–'84, while house surgeon in the Charleston City Hospital, I saw much of septicæmia, both in the wards and dead-house; there was nothing in my present case, either before or after the autopsy, to suggest septicæmia as the cause of death to my mind. I must therefore differ from the eminent Dr. Robert P. Harris, of Philadelphia, in the opinion expressed by him in a courteous note to me of recent date, written after having my case fully set before him, in which he says: "As there was no full autopsy made upon your patient, the cause of death must be largely conjectural. My belief is that an obscure form of sepsis was at the bottom of it—the high temperature and delirium would indicate this." There are two other causes of death to be mentioned, one of which I feel sure produced the fatal issue in this case: I refer to acute mania and iodoform poisoning. In a paper read by Dr. T. Gaillard Thomas before the New York Academy of Medicine, April 4th, 1889,* he described a condition of "acute mania and melancholia as sequelæ of gynecological operations," reporting six cases from his own practice and twenty recorded by other operators. In the discussion of this paper twelve additional cases were added, making in all thirty-eight cases of acute phychosis following gynecological operations up to that time. This "post-operative insanity"—a name suggested by Dr. L. C. Gray—is probably in no way peculiar to gynecological operations. That the symptoms are similar to those of iodoform poisoning will appear from the discussion following Dr. Thomas' paper, as well as from the fact that he himself recognizes the analogy and anticipates what followed by saying: "In four of my six reported cases not a particle of iodoform was used at any time; so these are out of consideration in reference to iodoform poisoning as a factor. In the two remaining cases iodoform was used, as I always use it, very cautiously and entirely on the line of cutaneous union, where absorption would have been next to impossible." Dr. J. B. Hunter called attention to the fact "that a very small quantity of iodoform would in some susceptible patients cause iodoform poisoning." Dr. Mundé "did not believe iodoform had any influence, for he had seen wounds packed with it, yet the patients did not become maniacal." In closing the discussion Dr. Thomas said: "If iodoform possesses the disadvantage of ever producing such grave results as had been described during the evening, it seemed to him that the advantages which pertained to it hardly warranted its use. He was in the habit of sprinkling a little iodoform along the line of sutures which closely coaptated the edges of the external abdominal wound in laparotomy, yet he was not prepared to deny Dr. Hunter's position; that even under those circumstances the iodoform might cause poisoning. He had some cases of insanity lasting three or four days, due to iodoform poisoning, but had not mentioned them in the paper." Dr. H. C. Wood says:* "The extensive surgical use of iodoform has led to a number of poisonings by it. The symptoms are variously described, and it is almost certain that in some cases they have been due to the wound and not to the dressing. They may be preceded by general malaise for a day, and then suddenly burst forth. In the most characteristic and severe class of cases the phenomena resemble somewhat those of meningitis, and may be somnolence, deepening into stupor, with contracted motionless pupils, or restlessness, ending in active delirium, in either case the temperature being normal and the pulse exceedingly rapid. A peculiarity of these cases seems to be that death usually follows, although the symptoms have developed abruptly and the dressings have been removed at once. Dr. Schede, of Hamburg, describes six classes of cases, his sixth form being that just spoken of. 1. High fever, without other phenomena. 2. Fever, with mild gastro-intestinal irritation, depression of spirits and rapid pulse; recovery almost invariable. 3. Very rapid, soft pulse—150 to 180; no fever; great danger. 4. Very rapid pulse, with high fever; death almost invariable. 5. After severe operations, rapid collapse and death. A form of poisoning, with melancholia, dilated pupils and hallucinations is also described." I can testify, from a somewhat extended personal observation of Dr. Schede's work in Hamburg last summer, that he still uses iodoform abundantly as a surgical dressing, and apparently without fear, especially after severe operations in the mammary, axillary and cervical regions, where it seems that absorption would certainly take place very readily.

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* "Medical News," April 13th, and "Medical Record," April 20th.

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* Therapeutics, etc., seventh edition.

In what category this case will be placed in the history of death following Cæsarean section I cannot say; but nothing is more certain to my mind than that it should not rank with deaths from septicæmia. Whether or not I am right in my belief that it lies between "post-operative insanity" and iodoform poisoning I will leave others to say.

It should be stated in closing this report that the child at this date (August 15th) is living and doing well.

NOTES ON STATISTICS OF THE OPERATION, BY DR. R. P. HARRIS.

July 23, 1889.

Dr. J. M. Hays :—Dear Sir :—As you have given no particulars of the Cæsarean case to be reported, not even the date or result, I enclose a blank to be filled up for my private register. This will also give the points to be recorded, all of which rarely appear in a reported case.

It is impossible to state how many Sänger operations have been performed up to this time; but there have no doubt been over 200.

There have been 30 operations, with 13 recoveries, 16 deaths and 1 (your own) result not given, in the United States (1882–1889).

Germany has had 91 operations, with 11 deaths: 2 cases, result unknown, but probably favorable.

For 1888 I have collected for Continental Europe	54
" United States	12

Deaths in Continental Europe, 5; cases unknown 2.
" United States, 7 (i. e., 5 out of 52, and 7 out of 12).

Of 189 cases in all, there were, recoveries	140
" " deaths	45
unknown, including "case 189"	4

Operations of Continental Europe	153	1882–1889.
Deaths	26	
Not given	3	

Yours, very respectfully,
Robert P. Harris.

There were 177 Sänger operations up to January 1, 1889.
" " 65 " " in the year 1888.

At this rate there will be 242 by January 1, 1890, and there must have been over 30 this year thus far, of which not half have yet been reported. R. P. H.

July 30, 1889.

Dear Dr. Hays:—Please state why your patient died—such a case should have recovered.

Cæsarean operations of the United States	186
Women died	115
Cæsarean operations in Philadelphia, not including Porro cases (3—2 died)	15
Women recovered after "old style" (6 cases)	2
" " " "Sänger's method" (7 cases)	5

The 2 deaths were the first 2.

There have been 6 Sänger operations in the United States this year, with 4 recoveries; 3 of the latter in Philadelphia.

In March, 1852, there was a Cæsarean operation at Fayetteville, N. C., under Drs. Mallett and McSwain, on a Mrs. Taylor, a white woman of 21, with an arm presentation. Pelvis small, c. v. 3 inches. Trans. 3 inches. Woman "fatigued and worn out" under labor. Woman recovered; child lived!

Three years later the woman ruptured her uterus in labor—three months and six days after the accident Dr. H. A. Bizzell performed laparotomy, and Mr. T. again recovered.

Case communicated by Dr. Bizzell, who questioned the necessity for the Cæsarean section.

Yours truly, Robert P. Harris.

August 6, 1889.

DEAR DR. HAYS :—As there was no full autopsy made upon your patient, the cause of death must be largely conjectural. My belief is that an obscure form of sepsis was at the bottom of it—the thigh temperature and delirium would indicate this.

There have now been 194 Sänger operations, with 48 deaths.

R. P. HARRIS.

CLINICAL REMARKS ON A GANGRENOUS LIPOMA OPERATION.

Service of MIDDLETON MICHEL, M.D. (Reported by Dr. W. O. Nisbet, House Physician, Charleston, S. C.)

But for the condition in which you see this large tumer on this woman's shoulder there could be little difficulty of at once recognizing its true nature.

This ulcerative, suppurative mass, with its accompanying fetor, might suggest the idea of some malignant tumor, certain to return if removed. Such, however, is not the case. This, on the contrary, is an ordinary fatty tumor, growing precisely where it is most frequently met, on the shoulder, and it is called a "Lipoma," which means *fat*.

However common these fatty tumors may be, this particular one is of special interest from a clinical stand-point. It is, indeed, extremely rare, that we meet this growth in the pathological condition in which you here find it. Usually a fatty tumor is perfectly smooth, or very slightly lobulated, indolent without pain, circumscribed and limited by a distinct capsule, cumbrous only through its great size and weight, since these growths acquire, as you see, remarkable dimensions. Tumors of this kind, present usually an investment of condensed cellular tissue, which forms a capsule, the density of which depends upon the region in which the lipoma groms; for immediately back of the neck and shoulders we may expect a relatively thin and attenuated covering since the cellular tissue here is not excessive.

As regards the diagnosis of a lipomatous tumor, we ought seldom to be embarrassed, if we remember that it is usually a smooth, though somewhat lobulated, painless tumor, of slow growth, with no involvement of glandular strictures in its vicinage. But it happens sometimes, though very rarely, that, from the great size of the tumors, from the preternatural distension of the capsule and skin, and, perhaps, from marked degeneration of the fatty lobules, which often tend to resolve themselves into a fluid state, subsequent abrasion, ulceration and gangrene of the tissues ensue, producing so great a change in the absolute condition of the original growth, that this slowly assumes a malignant aspect, and the patient is obliged to apply for surgical assistance. Such a condition as we have supposed you see actually has occurred in this woman.

The continuance of such a state of disease leads necessarily to blood-poisoning if not interfered with surgically; indeed, the patient already appears wtih some symptoms not unlike such as we might ascribe to septicæmia; under such circumstances, therefore, her application for relief calls imperatively for the removal of this growth.

The cause of lipomata is always obscure. Why adipose tissue should thus become locally incapsulated is certainly not very plain. When that form of the disease, which is spoken of as diffused lipoma presents itself, without any limiting membrane in the form of a capsule, spreading over, and almost belting, a limb or some other part, for example, surrounding half the neck, as it sometimes does, we can readily comprehend that the trouble here consists in nothing more or less than an excessive increase of the tissue in its own natural bed; but it is not equally apparent why this fat should grow within a limited investment, very often forming an immense tumor pendant to the part by a peduncle formed by the same skin, though the peduncle itself contains perhaps no fat at all! Pressure or a blow upon a part may be presumed to have excited an exuberant growth of fat in a particular region, which fat presses out, displaces and ultimately condenses the connective tissue into a veritable capsule, lapsing into which sac it becomes an isolated mass, the weight of which drags the integument into the form of a peduncle.

Lipomata may occur in any part of the body, since adipose tissue is found almost everywhere beneath the skin; but they seem to be more frequent upon the trunk. Many years ago I removed from the right labium pudendi a large tumor which extended to the knee, the peduncle of which was borrowed from the inner side of the thigh as well as from this portion of the vulva. There are two situations, however, in which these growths are never found. They can never be developed where no fat exists, as in the serous cellular tissue of the eyelids and scrotum; and then, again, where the hard skin, in the exercise of its function, is subjected to more or less constant pressure, as in the palmar and plantar surfaces. Whenever fat abounds it is possible for such tumors to occur, thus, in the abdominal cavity, we may encounter a purely fatty tumor developed within the omentum. On the contrary, where no fat obtains in or about a part, no exactly similar production in the form of a veritable tumor seems possible. I am not sure, therefore, that one can speak with propriety of a lipoma of the testicle since no adipose structure is to be found in or about this gland. While a fatty degeneration of an organ is quite a different thing.

In certain pendant parts we meet with hypertrophy of the skin, as in the scrotum and vulva, which assumes elephantine proportions, constituting tumors called pachydermatoceles; these are not to be confounded with the disease I am describing. They are hypertrophies of the dermis proper, a disease of the skin—only, not of the tissues beneath the skin. From the very nature of elephantiasis, such a growth, most common in negroes and often congenital, can never be confounded with a simple development of adipose tissue.

Now, with respect to treatment, I have nothing to say of attempts to cure or to reabsorb these fatty masses by the many drugs and salves which have been proposed from time to time. The surgeon knows of but one way of at once removing the trouble, and that is with a knife. No serious difficulty nor danger is connected with the removal, particularly, when a well isolated peduncle exists. Circumscribe the peduncle and dissect away the mass, and when this attachment to deeper seated parts is well defined and limited, the ablation is accomplished, perhaps, with no dissection at all, but with one sweep of the knife, thus resolving the operation into one of the simplest in surgery. With the fetor that surrounds us here and the gangrenous state of this mass, we have first to disinfect it, so that an assistant may be better able to handle the same, while the anæsthetic is being administered.

REMARKS.

From the hospital record we may supplement the professor's comments upon this case by stating that L. J., a mulatto woman, was 60 years old, of marked obesity, weight 175 pounds, exhibited general prostration, with persistent anorexia. The tumor, oval in shape, was about the size of a large child's head, attached by a pedicle three inches in length over the supra-spinous fossa and superior border of scapulum. It had been growing for five years without pain or inconvenience, until a few weeks previous to admission into hospital, when a small suppurating spot appeared on the summit of the tumor and progressed with rapidity, involving much of the skin and dipping down into the growth to one third of its depth. The odor was intensely repulsive, and the discharge so considerable that constant irrigation with Labarraque's solution was necessary to keep her cleansed—covered with oakum and deodorized with 1—500 solution of permanganate of potash. Under chloroform two eliptical incisions included the pedicle and furnished the necessary flaps; very little hemorrhage; the wound was washed out with 1—2000 bichlor. solution, drainage-tube inserted, and wound closed with interrupted suture. Examination disclosed a true lipoma, invested by a fibrocellular capsule, with septa passing inward, dividing tumor into lobules of various sizes.

SUPRA-PUBIC CYSTOTOMY FOR ARTIFICIAL URETHRA IN PROSTATIC OBSTRUCTION AND FALSE PASSAGE.

By W. W. Lane, M.D., Wilmington, N. C.

For the relief of those urgent and distressing cases which often present themselves to the surgeon for immediate interference otherwise than by the natural outlet, four methods are offered for gaining access to the bladder. I will merely allude to these several methods, stating more in detail the case under consideration in the caption of this article:

1. *The Aspirator.*.—This may be used in cases of great emergency, when the surgeon is compelled to relieve retention without regard to the cause. It is especially suited to those cases where there is reason to believe that the urine will be passed in a few hours by the urethra.

2. *Puncture per Rectum.*—This drains the blood-bladder well, but the serious disadvantages connected with it are so great that the supra-pubic operation is always preferable.

3. *Puncture through the Prostate.*—Mr. Reginald Harrison, the Liverpool surgeon, has advocated this method and published a successful case in an octogenarian with prostatic retention. There are many objections to this method—the patient must be kept in bed, and the danger of septic phlebitis is very considerable.

4. *Supra Pubic Puncture.*—This operation has the advantage of being easily performed, of giving permanent relief, if desired, and of being safe. The two objections brought against it are (1) that it gives bad drainage, and (2) it is liable to extravasation. Neither of these are borne out by facts.

Jacobson, the Guy's Hospital surgeon, from whom I have here quoted, says he considers it the best all-round method, and the one of widest application that we have. Its relief is immediate, safe and simple withal. His operation (of supra-pubic puncture, described above), will be seen differs from Dr. McGuire's, the method I followed in the case related. A median puncture is made through the skin just above the shaved pubes with a curved trocar and cannula, the latter carrying tape-holes, but a straight instrument may be used, through which an 8 or 9 gum-elastic catheter, or better, a Jacque's catheter, is inserted. In four hours the cannula can be removed, and a larger one—a 10 or 12—introduced.

S. B., aged 54, had been suffering from enlarged prostate for several years, and his physician had furnished him with a gum catheter and instructed him in its use.

This he was in the habit of introducing with the aid of a stylet, but an evil day came when, with the latter protruding through the eyelet of the catheter, he succeeded in punching an opening below the prostate, and, urged on by an increasing desire to void his urine, his continuous efforts resulted in the formation of a deep pocket in the pelvic fascia. This cavity my friend, Dr. Burbank, reached with a catheter and drew off a large quantity of bloody fluid; it was impossible to pass any instrument, of the smallest calibre, into the bladder, the parts being so much swollen and congested. Under these conditions the bladder greatly distended, and the suffering very great; his feet and legs boggy; a dome-headed aspirating trocar was pushed into the bladder just above the pubes, a Davidson syringe attached, and a large quantity of stinking urine pumped out to the great relief of the patient.

This operation I repeated twice in the following twenty-four hours, when another effort to pass the obstruction failed, the instrument invariably turning into the large pouch alluded to.

Deeming it unsafe to continue puncturing the diseased organ, I determined to follow the method devised by Dr. Hunter McGuire under similar circumstances, viz: making an opening through the supra-pubic region to serve as a temporary urethra, or a permanent one, if it should prove necessary. There was no time to be lost in doing this, as the retention of this strong ammoniacal water was rapidly approaching its characteristic effect on the system.

The peculiarity of the case did not admit of my carrying out in detail Dr. McGuire's method, for the following reasons: The symptoms were urgent, the bladder could not be washed out with hot carbolized water, as no catheter could be introduced.

I had no gum bag for introducing into the rectum for the purpose of pushing the bladder over the pubes, and the lack of this rendered the operation much more difficult than it otherwise would have been.

OPERATION.

A vertical incision was made, beginning between three and four inches above the pubes and extending to the symphysis along the line of the linea alba, the incision in the latter being about an inch shorter than that through the integument.

The cellular tissue along with the transversalis fascia was carefully divided on the director until the wall of the bladder came into view. The peritoneum was not met with.

The bladder was now hooked up with the tenaculum and opened low down; but the latter having lost its hold, the collapsed viscus slipped out of sight, and it was very difficult and tedious to regain but through the skill and patient perseverance of my assistant, Dr. Burbank, it was finally brought to light.

It was at this point of the work that the need of the distended bag in the rectum was sorely felt, and with my present experience would not advise anyone to attempt the operation without its use.

The bladder having now been explored with the finger, and well irrigated with the bichloride solution 1—2000, the incision was secured with tolerable deep sutures, though not including the recti muscles.

A catheter was passed through this track into the bladder and retained thirty-six hours; it was then removed, the parts well supported with adhesive straps, and covered with a pad of absorbent cotton, the latter to be as often renewed as necessary.

The urine was kept in an aseptic condition through the administration of the mineral acids.

August 30th.—The patient was discharged from hospital, the operation having been done on July 20th. The swelling in feet and legs has entirely disappeared, and his general health fully restored. A small well-turned-up prostatic catheter could now be introduced, per via naturales, with a great deal of care, though the false passage had not yet closed; but as he would in all probability have gotten into trouble again, if allowed to use one himself, and as he also prefers it to the old urethra, it was thought advisable to allow it to remain permanently. The wound has healed kindly, the patient passes his water freely, in a very fair stream, several feet from the body, with no retention, and only some dribbling at close of the act. The result was better than I anticipated from a mere slit in the bladder, without any of the advantages the neck of that organ affords. I was for some time apprehensive that he would never be able to eject his water in a stream, but as the fistule gradually assumed the function of a urethra, the external meatus in the skin was contracted in a hose-like fashion, which enabled him to urinate with some degree of force. The result, on the whole, was altogether satisfactory, and the patient highly pleased—says he does not wish to use the catheter any more, and is very grateful for the relief that has been afforded him from his suffering, and has returned to his usual avocation. The profession is certainly very much indebted to Dr. McGuire for pointing out to us this efficient method of dealing with these very serious complications. Speaking for myself, I thank him very sincerely.

DEAFNESS—ITS CAUSES AND PREVENTION, FROM A RATIONAL STANDPOINT.

By J. M. HAYS, M.D., Oxford, N. C.

(Read before Conjoint Session of the Medical Society and State Board of Health.)

The importance of a more general and thorough knowledge of the causes which deprive so many of our fellow-beings of the valuable sense of hearing, and also the rational means of avoiding the same, must be so apparent to this intelligent assembly as to perhaps render unnecessary any apology for the subject which I have selected for my paper—a subject which in such a large measure influences man's physical, mental and social well-being, from the cradle to the grave; determining whether he shall be a useful and happy member of society, or a more or less useless and unhappy one, too often dependent upon public or private benevolence.

I think no one will deny, however, that it is a branch of science of which almost nothing is known by the public at large, and one which is more than any other ignored by the physician. I repeat it, that of all the numerous divisions and sub-divisions which the science of medicine has undergone in recent times, Otology has, in proportion to its practical merit, received less attention at the hands of those whose function it is to ameliorate the ills of human kind, than any other branch of our science. Nor do I believe the cause is hard to find—the principal one, at any rate—which, if I mistake not, is that the public, as a rule, do not have an adequate appreciation of the hearing sense until it is practically lost or greatly impaired; and even then, in the majority of instances, they ignorantly wait for nature to heal the trouble, or for various other reasons delay seeking intelligent advice until too often the disease becomes hopelessly chronic, and the best professional skill is of no avail. And so the doctors get careless and indifferent; the people lose faith in the curability of ear diseases, and the percentage of deafness continues to increase rather than to diminish with the advance of civilization; and let me say here, parenthetically, that even Nature herself seems to have wofully neglected ear diseases, and is totally unreliable in that line of practice. I therefore ask of this body, as conservators of the public health and disseminators of hygienic science, that they emphasize the importance of a more general interest in the matter of ear diseases, both on the part of the medical profession and the people at large, than has hitherto been accorded the subject.

Permit me, Mr. President, in order to an understanding between my audience and myself as to what I have to say, to dwell for a few moments upon the mechanism of the ear as the organ of the special sense of hearing, and upon the functions of its intricate and beautifully constructed arrangements for the reception and transmission to the deeper structures of the brain of every variety and shade of sound—from the faintest whisper of the Æolian harp to the grandest outburst of the full orchestra; from the exquisite trill of the distant nightingale to the everlasting roar of Niagara.

For convenience of description the ear has been divided by anatomists into the external, middle and internal ear—a division which is observed as well in all systematic treatises on the diseases of this organ; for, owing to the essential difference in the intimate structure and functions of these parts as well as in their location, the fact must naturally be inferred that the diseases affecting them must be likewise different. *You will observe that I have here pictured the various parts of the ear very much enlarged, which will, I hope, give you a fair idea of the relation of the parts concerned in hearing to each other. The external ear consists of that portion of the organ projecting from the head known as the auricle and of a canal extending inward in a somewhat tortuous direction to the drum-membrane. This external auditory canal is a little less than half an inch in diameter and about an inch and a quarter in length. The skin lining this canal throughout its whole extent is not peculiar except that situated within and immediately beneath it are numerous minute glands, known as ceruminous glands, which, together with the glands accompanying the little hairs of this region, secrete cerumen or "ear-wax." This substance is extremely bitter, and, owing to that property, it is doubtless a valuable agent in preventing the ingress of insects. The function of the internal ear is merely to collect the waves of sound and direct them to the drum-membrane. The latter is a delicate semi-transparent membrane, dividing the external from the middle ear. It can rarely be seen in the white races without instrumental aid, but may usually be seen in

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*Referring to a beautifully executed drawing by the author.—EDS.

the negro by simple inspection, owing to its larger size and greater straightness in that race. The membrane is tilted outward from above at an angle of 45°, usually, though, in "musical ears," it is much more vertical.

The middle ear, or tympanum, which is the part concerning us more particularly at present—since the seat of deafness is most frequently to be found here—is situated within the substance of the temporal bone, and in that part of this bone, which, on account of its extreme density, is called the petrous portion. This little tympanic cavity measures something less than half an inch from before backward, one-fourth of an inch in the vertical direction and a little less in the transverse. It is guarded from the outside world by the drum-membrane. To the inner side lies the internal ear, hid in the dark recesses of the petrous bone; behind it is connected by several small openings with the little cavities in the mastoid portion of the temporal bone known as mastoid cells; and anteriorly it is continuous with the Eustachian tube, of which more directly. The middle ear is lined throughout with mucous-membrane similar to, and continuous with, that lining the nose, mouth and throat, and, I may say, the whole respiratory and digestive apparatus and all other cavities or tubes communicating with the exterior by the different openings of the body. Now, this mucous-membrane which *lines* the body is very analogous to the *skin* which covers it. Each is abundantly supplied with a series of minute glands whose function it is, in the main, to lubricate the parts respectively: in the *external* skin this secretion (or excretion, if you will,) is perspiration; in the *internal* skin, or mucous-membrane, it is called mucus. When the secretion of these mucous glands becomes excessive from disease, the condition is known as catarrh—it matters not in what part of the body the affection is located. The middle ear then, you will please bear in mind, is lined with this mucous-membrane. Traversing this little cavity and directly connecting the drum-membrane with the internal ear, are three little bones or ossicles known as the malleus, incus and stapes, from their resemblance to a hammer, anvil and stirrup. The malleus is intimately adherent to the drum-membrane, the stapes is attached by the so-called foot-plate of the stirrup to one of the two little doors between the middle and internal ear, while the incus is placed between these two ossicles and forms the bond of union between them.

Herbert Spencer says:* "Men who would blush if caught saying Iphigénia instead of Iphigenīa, or would resent as an insult any imputation of ignorance respecting the fabled labors of a fabled demigod, show not the slightest shame in confessing that they do not know where the Eustachian tubes are, what are the actions of the spinal cord, what is the normal rate of pulsation, or how the lungs are inflated. While anxious that their sons should be well up in the superstitions of two thousand years ago, they care not that they should be taught anything about the structure and functions of their own bodies—nay, would even disapprove such instruction. So overwhelming is the influence of established routine! So terribly in our education does the ornamental override the useful!" I will tell you where the Eustachian tube is—the description of one, of course, sufficing for both. It leads from the middle ear to the upper part of the throat or pharynx, and opens into the latter near the posterior orifice of the nose. This tube is from one and a half to two inches in length, and about the diameter of a goose-quill. It is lined, of course, with mucous-membrane. The function of the Eustachian tube is exceedingly important, and is especially to be noted in view of the relation it has with very many of the most ordinary forms of deafness. It is a well-known fact that the weight of the atmosphere is about fifteen pounds to the square inch, making a constant pressure of about five pounds on the delicate drum-membrane. It is evident that this pressure could not be sustained if the opposite side of the membrane were a vacuum; so that the Eustachian tube is placed here to transmit air freely to the cavity of the middle ear, and so compensate for the external atmospheric pressure. So much for the middle ear at present.

The internal ear consists of an irregular and exceedingly delicate bony cavity known on account of its great tortuosity as the labyrinth. Its structure and the ultimate distribution of the auditory nerve within its limits are matters which are scarcely germain to my subject. Suffice it to say that this labyrinth is filled throughout with a clear, watery liquid suspended in which are the terminal nerve filaments connecting with the little rods of Corti, which, according to Helmholtz, are about 8,700 in number—the whole arrangement resembling a harp with thousands of strings, played upon, as it were, by every conceivable sonorous vibration. The internal ear is, after all, the most essential part of the auditory apparatus; for whenever and however waves of sound impinge upon these nervous filaments, they are perceived by the brain as such unless, indeed, there is some fault in the nerve trunk, or sensorium itself.

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* "Education: Intellectual, Moral and Physical."

As regards the physics of sound, I shall say but a few words. It is scarcely necessary to state that the wave theory is the one accepted by all physicists at the present day. When I cause my tuning-fork to vibrate it sets in motion waves of air at the rate of 512 to the second—it being a middle c. These waves, travelling at the rate of about 1,000 feet per second, impinge upn the drum-membrane and cause it to vibrate in unison with the tuning-fork. These vibrations are transmitted through the little ossicles of the middle ear to the aqueous channels of the labyrinth where the properly tuned fibre of Corti, or harp-string, vibrating, also, at the rate of 512 to the second, takes up the sound, and, through the medium of the auditory nerve, conducts the impression to the brain.

Having now seen how sound is produced, let us glance at some of the most common forms of deafness with an especial view to their prevention. Of 7,835 cases of ear disease which I have collected from all sources, including my own modest contribution of 37 cases—the only ones of which I have accurate notes—I find that the principal trouble existed as follows:

External ear	1,067
Middle "	6,551
Internal "	171
Deaf mutes	48
Total	7,837

Many of the affections of the external ear do not come within the scope of my paper, as they do not produce deafness. I wish, however, to say a few words about foreign bodies in the ear, and under this head I shall include impacted cerumen or wax, the latter being by far the most common substance necessitating removal. Unless the foreign substance presses against the drum-head no material diminution of hearing results, but, as a rule, it will become thus impacted, sooner or later. This may take place in consequence of a sudden jar, causing it to change position from awkward efforts at removal; or, again, water may get into the ear and cause hardened wax, a bean, grain of corn, or something of the sort, to swell and thereby produce impaction. Extraneous substances of almost every kind, animate and inanimate, have been found in the ear, especially in the case of children who put them there in play, little dreaming what may be the consequences of their folly.

A remarkable case of a foreign body in the ear occurred in the practice of my friend, Prof. F. L. Parker, of Charleston, S. C. He was sent for to see a man who had been suffering for six months with a violent cough and terrible pains in the ear and head. He had been treated for consumption and other things, but without any degree of relief. His condition was pitiful in the extreme. Prof. Parker gave him speedy relief from all his woes by removing a flea from his ear. I have a patient into whose ears I cannot introduce a speculum without setting up a violent cough. Such phenomena are due to the sympathetic nervous connection between the ear and larynx. If there is no disease of the ear the proper removal of the offending body will always restore the hearing to normal. It is hardly necessary for me to say that this should be done as early as practicable after impaction, for delay but invites serious consequences. In fact, some very estimable aurists advise the thorough renovation of the ears at least once a year as a matter of precaution. The habit which some people have of picking their ears with hair-pins, ear-spoons and the like, cannot be too strongly condemned. Many cases of serious and painful injury, such as rupture of the drum-head, with dislocation of the ossicles, have resulted therefrom. The little finger, covered with a moist cloth, is, as a rule, the only instrument which anyone should use in making the toilet of the ear who is not familiar with its anatomy and who has not the proper instruments, with a steady hand to use them, and under the best illumination. The ear-syringe is usually a harmless instrument in the hands of a person of ordinary intelligence, but due discretion should be exercised in its use, since, as in case of the lodgement of a bean, etc., if the attempt at removal should be unsuccessful—and this is frequently the case—any moisture serves only to swell the foreign body and render it more difficult of removal by the proper means, to say nothing of the danger of serious inflammation being established by such swelling.

The name of the popular remedies for deafness, ear-ache and the like, is legion, and there is scarcely an old granny but has some favorite local application for the treatment of such cases. I have often had my attention called earnestly by them to the specific properties of the warm blood of the cock roach in deafness, and numerous cases have been cited by them to establish their absurd claims. John Wesley, who had some outlandish prescription for everything, advised: "For deafness, put a little salt in the ear.* The most common medicine for earache used by the unenlightened public is, I believe, sweet oil and laudanum. In regard to this I have to say that it is irrational, uncleanly and often injurious. It is never spoken of by the ear specialist except in words of condemnation. In the greater number of cases where this prescription is used the trouble is due to an acute inflammation of the tympanum or drum-membrane. One of the most distinguished authorities on ear diseases in New York says in regard to the use of sweet oil and laudanum: "This procedure does, indeed, in some instances, diminish pain, but it accomplishes this in an illegitimate manner. It deadens the nervous sensibility of the inflamed parts, but it does not arrest or diminish the inflammation. On the contrary, both the oil and the alcohol in the laudanum tend rather to increase the inflammation: the former by reason of the numerous germs of vegetable mould it contains and which may quickly take root in the inflamed tissues—the latter by reason of its well-known irritating properties."†

I wish now to speak of inflammation of the middle ear, which is by far the most important division of the subject, producing, as it does, about 85 per cent. of all cases of deafness. It attacks persons of all ages and classes, and varies in severity from cases so mild as scarcely to attract the attention, to others causing death in a few days. Roscoe Conkling was caught in the severe blizzard in New York last winter; an acute attack of inflammation of the middle ear was the result. The sequel you all know—how the disease spread to the brain, producing meningitis, of which he died. This was not a unique case; hundreds of our fellow-beings have gone in the same way.

Inflammation of the middle ear is either catarrhal or purulent; that is, the discharge from the mucous-membrane may be either simple mucus, or the inflammation may be of a more violent form and cause a discharge of pus or "matter." The constitution of the patient may have much to do with deciding this. In either case the trouble may be acute from the first and gradually assume a chronic form, or it may be chronic from the beginning. If the inflammation is of the purulent form the drum-membrane almost always ruptures in order to give vent to the pent-up pus, for the Eustachian tube is closed by the inflammation, and the matter seeks an exit by the easiest way then remaining, and this, fortunately, is usually the drum-membrane. When the latter is dense and refuses to yield, the danger of meningitis is always greatly increased. After this rupture takes place, followed by a copious discharge of pus, great and immediate relief is experienced; but the danger is not then over. Dr. Roosa, of the New York Post-Graduate School, than whom there is no higher authority in matters pertaining to the ear, impresses upon his students that, "with a running ear, one's life is constantly in danger; and yet," says he "how many there are who say: 'Let it run'; and this, too, even in the nineteenth century." It is a well-known fact that most life insurance companies refuse any applicant with a running ear. The causes of middle ear disease are numerous, and I will only ask your indulgence while I speak of those most frequent. Of these direct cold takes the lead. This may act with sudden violence, as in the case of Mr. Conkling, or its results may be more insidious and a catarrhal condition be established. "American residences and business-houses are heated in cold weather by dry hot air, and kept at a temperature of 70° F., or higher. The inmates are subject to this dry hot air, often laden with dust and noxious gases, the greater part of the day. The skin, consequently, is very active in its functions, and kept moist by free perspiration. But, though constant exposure renders the soldier, Spartan-like, indifferent to colds and storms, housing the body makes it tender, like the hot-house plant, and sensitive to sudden and extreme changes in the air. After working all day in such a temperature these people pass out into an atmosphere perhaps 20° colder. The skin is chilled, the perspiration checked, and a determination of blood to some internal organ occurs. Naso-pharyngeal catarrh is probably the most frequent consequence. The result is aided by high winds and the inhalation of dust. Indeed, a very large percentage of cases of naso-pharyngeal catarrh undoubtedly is due to the irritating effects of dust; this operating in conjunction with cold, damp air, seems largely responsible for the widespread existence of naso-pharyngeal catarrh among Americans. It is probably the most prevalent disease in this country.* I think from what I have already said about the close relationship existing between the ear and throat, it will be readily seen that any cause producing inflammation of the throat, and I may say nose, also, for they usually go together, may affect the ear by an extension of the inflammation, or catarrh, through the Eustachian tube to the middle ear. Everyone who has ever had a bad cold has experienced little crackling noises in the ears, especially after a somewhat violent use of the handkerchief. Frequently a disagreeable fulness is thereby produced, which usually disappears after swallowing or gaping. If you will compress your nostrils and blow, you will understand what I mean. This is known as Valsalva's method of inflating the middle ear—a method which is rarely advised in practice, however, for many reasons, not necessary for me to state here. The explanation of the phenomena produced is simply this: you force a superabundance of air through the Eustachian tube, and in case you have a hard cold or chronic post-nasal catarrh, mucus also is driven into the middle ear. The air thus forced puts the drum-membrane on the stretch, and if the inflation is very violent a peculiar roaring or buzzing sound is produced, and sometimes a slight vertigo. Now, in the act of swallowing this excess of air is liberated by the action of the muscles of the palate on the orifice of the Eustachian tube, and if the nostrils are again compressed, as you swallow there is a tendency toward a vacuum in the naso-pharynx and the normal amount of air in the middle ear is lessened, while the drum membrane is drawn somewhat inward.

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*Primitive Physic; or, an Early and Natural Method of Curing all Diseases." See "New York Medical Record," December 11th, 1886.

†Buck: Ashhurst's Inter. Ency. Surgery. Vol. V. Pp. 324–'25.

The severe headaches so frequent, especially with children, are usually due to exposure to cold and wind; an acute catarrh, or head-cold, is thus produced, causing a congestion of the Eustachian tube or drum-cavity, or both, with consequent pain; the rationale of which I will try to explain directly.

In chronic naso-pharyngeal catarrh there is an obstinate inflammatory condition of the mucous-membrane lining the nose and throat. In health this lining memembrane secretes an amount of mucus merely sufficient to keep the parts well lubricated, but not enough to cause any discharge either from the nostrils or in the throat; so that when a person finds it necessary to "hawk" every morning in order to dislodge a lump of mucus from the posterior nares, or, if the nose is clogged with scabby material caused by the drying of the mucus by the respiratory air during the night, such a person has the first symptoms of chronic post-nasal catarrh, and should *at once* be placed upon the proper treatment; for, beside the long train of distressing symptoms directly referable to the condition of the naso-pharynx, the vocal apparatus will in time become affected, and so-called clergyman's sore-throat follows, and the ears are liable to become early involved from a spread of the catarrhal process through the Eustachian tube to the tympanic cavity itself. It will be remembered that the atmospheric pressure upon the drum-membrane is about five pounds—on each side, of course, so long as the Eustachian tube remains pervious; but so soon as it becomes stopped up with mucus and air, can no longer pass through it to the middle ear, there is atmospheric pressure only from the outside. Deafness is then the inevitable consequence, its degree being in direct ratio to the intensity of the inflammatory process, but more especially to the length of time it remains untreated. The hearing is affected by catarrh in various ways :

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*Dr. Bishop: Trans. Inter. Med. Congress, 1887. Vol. III. Pp. 806–'07.

1. When the atmospheric presssure is cut off from the inner side of the drum-membrane the latter is driven in, or sucked in, if you will, by the tendency toward a vacuum in the middle ear. This presses the little ossicles against the labyrinth, compresses its watery and nervous contents, and very frequently producing a most disagreeable ringing in the ears known as tinnitus aurium—a sensation compared by such sufferers to the ceaseless singing of crickets or rattling of dry-flys in the ears. Cases of insanity, brought on, apparently, by this cause alone, are reported.

2. The catarrhal process, when chronic (and by the term chronic I mean merely to exclude simple cases of "cold in the head" of short duration), is always accompanied by a thickening of the mucous-membrane. This necessity encroaches upon the diameter of the Eustachian tube and frequently closes it; but, what is of more serious import, it affects the vibratory action of the delicate drum-membrane and renders partially immobile the joints of the little ossicles producing a well-marked type of anchylosis. Rheumatism sometimes affects these little joints in the same way.

3. The actual presence of a thick, viscid matter in the middle ear, which in some cases quite fills its cavity, must obviously interfere with the proper function of all that is contained therein. The above condition of affairs is, as I have said, exceedingly common and produces by far the majority of all cases of deafness. Such a result is due solely to neglect, but is the one which, if Nature be allowed to manage the case, will always be reached sooner or later. Taken in time, however, when the first manifestations become apparent, such cases are quite amenable to proper treatment. Perhaps it is not going too far to say that in every case the progress of the disease may be checked even if the deafness and tinnitus be quite well marked.

It is very unfortunate that the impression is so widespread that catarrh of the nose and throat is incurable—an impression which, I have occasion to know, obtains even in the ranks of the medical profession.

In the purulent forms of middle ear disease the trouble begins, as a rule, with a violent inflammation of the part accompanied with fever and intense pain. In a few days, usually, the drum-membrane ruptures, a free discharge of matter through the external ear takes place, and gracious relief is experienced. It is always fortunate when Nature relieves these so called "risings in the head" by rupturing the drum-membrane, for otherwise there is great danger of the inflammation, or inflammatory products, reaching the brain and causing meningitis. Very rarely an acute purulent inflammation will relieve itself through the Eustachian tube, but it will not do to presume upon this unusual turn of events Hours and days of intense suffering, and even death itself, may be prevented by the timely resort to proper surgical interference in these cases.

In every case where there is a discharge of mucus or pus through the external ear there is a perforation in the drum-membrane. When the diseased condition causing this discharge is cured the perforated membrane soon heals. In fact, sometimes too great a disposition to heal is shown before the discharge ceases, and it becomes necessary to reëstablish the drainage outlet. Any acute febrile disease accompanied by a skin eruption, such as small-pox, scarlet fever, measles, cerebro-spinal meningitis, etc., is very apt to be accompanied with, or followed by, disease of the middle ear: typhoid and typhus fever might be mentioned under this head.

Diphtheria and croup are also very potent causes of this affection, and the same might be said of whooping-cough. The last mentioned disease differs from the others, however, in that the ear suffers in consequence of the violent inflations to which it is subjected during the paroxysms of coughing—sometimes even rupturing the drum-membrane. I am confident that, next to chronic naso-pharyngeal catarrh and the diseases just mentioned, the most frequent causes of deafness are the use of the nasal douche and snuffing water, etc., up the nose. The name of the man who first introduced this nefarious method of treating nasal catarrh ought to be anathema maranatha. I wish it were in my power to induce our General Assembly to make it a capital offense to offer for sale, or as a gift, a nasal douche within the bounds of our State, or at least make the tax upon them sufficient to support the Deaf and Dumb Asylum. One of the first questions asked at the Manhattan and New York ear dispensaries of patients who come in with middle ear disease is, whether or not a nasal douch has been used at any time, and in a large proportion of cases the answer is in the affirmative. It will be easily understood, I think, if you will consider for a moment the anatomy of the posterior nares in relation to the orifices of the Eustachian tubes, that any fluid which passes with even a slight degree of force through the nostrils, must almost inevitably find its way into these tubes and thence to the middle ear. This delicate and sensitive cavity will not even tolerate the presence of warm water kindly, and the addition of various medicinal agents to the water certainly does not lessen the danger of serious inflammation being caused by its use in this way. It is very certain that the direful results of these methods of treatment have been frequently enough recorded to place every physician upon his guard, and there is no writer upon ear diseases but who takes every favorable opportunity of condemning their use. Sea-bathing often has the same deleterious effect upon the ear from snuffing salt water up through the nose, as in strangling, etc. The drum-membrane is sometimes ruptured, too, by heavy waves striking the ear.

Immoderate smoking should be discontinued for many reasons, and it is especially proper for me to mention it in this connection, as tending to produce a chronic congestion of the throat which may lead to catarrh and cause deafness. This is not a "far-fetched" idea. The habit of exhaling smoke, especially cigarette smoke, though the nose has produced hundreds of cases of chronic naso-pharyngeal catarrh and consequent deafness. There are, of course, persons who have had cases of catarrh, who have used the nasal-douche, or other unscientific methods of treatment and smoked cigarettes "secundem artem," and yet have been delivered out of them all, with the hearing sense unaffected; but such cases are conspicuous as exceptions to the general rule, and perhaps have nickel-plated mucous-membranes.

The question as to whether or not quinine may be, and often is, guilty of carrying deafness, is one of unusual interest, and it is a matter of regret that the best authorities differ on this subject. From the well-known fact that malaria acts injuriously upon the ears, and as the largest doses of quinine are usually administered in this disease, it must, of course, be somewhat difficult to arrive at exact conclusions, from clinical experience, of the effects of the drug upon the organ of hearing. However, we are all aware of the fact that when a person is well under the influence of quinine there is a very disagreeable "buzzing or ringing in the ears, with deafness and a sensation in which his own voice sounds hollow and unpleasant." These phenomena are now, especially since the conjoint investigations of Hammond and Roosa upon the subject, pretty generally admitted to be due to an acutely congested condition of the middle ear and terminal filaments of the auditory nerve, though it is still, I believe, contended by some that the condition produced in these parts is one of anæmia, rather than hyperæmia. Now, while I have been unable to find in aural literature any well authenticated case of deafness due to quinine solely, and such acknowledged authorities as Roosa, Pomeroy and Buck doubt the existence of any such, it is admitted by all that "this drug is capable of fanning a slight and perfectly painless tubal and perhaps tympanic catarrh into a decidedly acute inflammation of this region.* It therefore behooves us to bear these facts in mind in the administration of quinine in large doses. A few days ago I was consulted by a young gentleman who had been quite deaf for a number of years, and who, with his whole family, had always attributed it to the effects of quinine. I satisfied myself by the ordinary tuning-fork tests that his deafness was not due in any degree to primary nerve trouble, and upon examination with the laryngoscope found the vault of the pharynx perfectly coated over with thick, yellowish mucus—and yet he was greatly surprised and shocked when I told him he had catarrh. I feel confident that quinine should bear but little of the blame in such cases.

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*Buck: Diagnosis and Treatment of Ear Diseases. Pp. 182-183.

Before leaving the subject of middle ear disease, I wish to say that in cases of chronic discharge from the ear there will frequently be found, upon examination, little tumors or polypi growing from the mucous-membrane of the middle ear and filling, perhaps, the whole external canal. These polypi, of course, make the deafness more profound, and on account of the danger of causing serious disturbance by pressure should receive surgical treatment without unnecessary delay.

Regarding deafness dependent upon disease of the internal ear, but little need be said. The nerve is the part affected in these cases, and this may be due either to direct injury, to the neglect of proper attention being paid to middle ear disease, to affections of the brain and spinal cord, etc. Secondary involvement from middle ear disease is the most common cause of nervous deafness, and is, indeed, about the only one which can be foreseen and prevented.

In view of the fact that these deep-seated diseases are so little subject to treatment, it is a very fortunate thing that less than five per cent. of all cases of deafness are due to disease of the internal auditory apparatus.

Chorea.—Prof. H. C. Wood says that antipyrin is a more successful remedy than arsenic. With the latter the average duration of treatment is sixty to ninety days. With anytipyrin he has succeeded in completely arresting convulsive movements within one week.—*Albany Medical Journal.*

SELECTED PAPERS.

NITRO-GLYCERIN—A SUBSTITUTE FOR ALCOHOL IN CASES OF EMERGENCY.

By JOSEPH B. BURROUGHS, M.D.

The dose is one drop of a 1 per cent. solution. This may be taken in water into the stomach, the physician dropping ten drops into a tumbler, and adding ten teaspoonfuls of water, one teaspoonful now representing one drop of the remedy. If there is need of great haste, or if the patient cannot swallow from being unconscious, one drop can be placed within the lower lip or upon the tongue by means of a dropper or pipette. The drug may be given hypodermically; but so rapid is its absorption through the mucous membrane of the mouth that, unless the syringe should happen to be filled and ready for use, I doubt if any time would be gained by the use of the needle. Patients are not all alike in the amount required to produce an effect—some requiring three or four drops to produce the same effect; the usual dose, however, is one drop. Patients also differ in the duration of the effect of the drug. Usually the effect lasts three or four hours, but in a few cases the effect has ceased in twenty or thirty minutes. Dropped on the tongue, the effect is more rapid, as there is no dilution. By way of the stomach, unless greatly diluted, the effect is apparent in a few minutes, the pulse being increased from 10 to 20 beats, and becoming full and regular. In larger doses the face becomes flushed, a severe headache is experienced, accompanied with a feeling of fullness, singing in the ears, flashes before the eyes, and all the symptoms of an increased supply of blood to the brain. On account of this effect on the cerebral circulation, care should be taken in administering the remedy to the aged, as the sudden expansion of the cerebral vessels might cause a rupture of their weakened calcareous walls. Its action on the heart is through the sympathetic nervous system. The vagus nerve and the vaso-contractor nerves of the vaso-motor nervous system are depressed, partially paralyzed. This allows the extensive system of arterioles to dilate, and thus give room within their walls for a greater amount of blood to flow. Thus this enlarged reservoir of tubes relieves the heart of the work of forcing the current through narrow-contracted tubes. This and the vagus nerve being depressed, permits the heart to beat freer, fuller and more rapidly.

In case of a poisonous dose of nitro-glycerin having been taken, we should select as antidotes such drugs as act in an opposite manner upon the vaso-motor nerves to that of nitro-glycerin. Our object should be to cause a contraction of the arterioles. The most desirable agents for this purpose are strychnine, ergot and belladonna. These agents should be given hypodermically, in case of poisoning, as they diffuse much more slowly than nitro-glycerin. Everything should be done to save the brain from injury by the engorgement of the blood-vessels (hyperæmia). In one case I gave instant relief from the agonizing headache by having the patient place his clasped hands behind his neck and press the thumbs against the throbbing carotid arteries.

I will now proceed to report a few cases in which I have used nitro-glycerin with benefit.

CASE 1.—*Neuralgia of the Heart (Angina Pectoris).*—M. B., aged 35; occupation, painter. The first attack was slight; but pain returned very severely the following night, and every night for a week. The usual remedies were given, also remedies for lead-poisoning, but the pain usually lasted until the night was spent. On the sixth night I gave one drop of a 1 per cent. solution nitro-glycerin, with the result of stopping all pain and difficult breathing in ten or fifteen minutes. One drop was given three times daily for a week, when, as no pain had been felt after the first dose, the remedy was discontinued. During the following two years he had several attacks, but each time was relieved at once by the same treatment.

CASE 2.—*Nausea and Faintness during a Minor Surgical Operation.*—A young business man, while lowering a barrel of kerosene into the cellar, had two fingers of one hand torn nearly from his hand by being jammed between the edge of the barrel and the stone wall. While dressing the wounds, although he was reclining upon a couch with an abundance of fresh air in the room, he suddenly became deathly pale, dizzy and sick at his stomach. Brandy and ammonia might have been given, but in less time than it would have taken to mix them with water, I had dropped upon his tongue one-drop of glycerin, which sent the blood rushing back to his brain and permitted me to finish the dressing.

CASE 3.—*Spasmodic Asthma.*—This was quickly relieved with one drop of nitro-glycerin, to the great surprise of the patient, a laborer, who was able at once to resume his work. Asthma, accompanied with a bronchial catarrh, is not so easily relieved.

CASE 4.—*Headache* in the anæmic has been quickly relieved by the remedy.

CASE 4.—*Rapid Prostration in Typhoid Fever* (*Enteric Fever*).—Mr. R., aged 40, carpenter, kept about his work until the severe headache and fever (102°, when he ceased working) compelled him to go to bed. The fever ran a severe course until the twenty-third day. Convalescence was slow for a week, when severe hiccough began, lasting several hours. The next day malarial fever manifested itself by the temperature running up to 104.5°, accompanied by severe vomiting and purging of bilious matter. Wild delirium in a few hours was followed by low mutterings and extreme prostration. The temperature and pulse fell rapidly, the pulse becoming remittent. Unless brandy were speedily given, it seemed to me he would die. The first spoonful given him he spat out with a cry that he was on fire, and refused to take more. I then gave him one-fourth of a drop of nitro-glycerin in water every fifteen minutes for two hours, causing the pulse to become full and regular. The delirium gradually subsided, and in twenty-four hours the mind was clear. Ultimately he recovered.

CASES 6, 7.—*Hysterical Aphonia.*—These two cases of hysteria—one a man of forty and the other a woman of twenty-six—are so nearly alike that the description of one will answer for both. They were suddenly attacked with rigidity of every muscle; were unable to speak or to move; respiration 60 per minute, short, superficial; pulse 40, and almost imperceptible; a terrible feeling of pain and pressure over the heart. They usually remained in this condition several hours, as the woman did the first time I was called to her bedside. A week later, being again to attend the woman, I administered one drop of nitro-glycerin at once. In a few minutes the heart-beat was 76, and full; the muscles began to relax; the respirations came in long, deep sighs; and in fifteen minutes she was as well as usual, except a little weak.

CASE 8.—*Acute Alcoholism.*—The patient, who was over forty years of age, had been drinking heavily for some months, although at the time he applied for treatment he assured me that he had not drank one drop for some months. His feeble pulse and shaking body seemed to indicate that he needed, with the tonics and food, something to take the place of his accustomed alcoholic drinks. I gave him one drop of nitro-glycerin. In a few minutes the blood was coursing more freely; but the weakened cerebral vessels were unable to keep their ordinary calibre under this drug. As a result of the expansion of the cerebral vessels there followed one continual piercing pain in the head. Nothing gave him relief until I directed him to clasp his hands tightly around the back of his neck, with his thumbs placed firmly over the throbbing arteries of the neck, (carotid). Entire absence from all pain was instantly had, and lasted as long as the pressure was maintained. In an hour he began to feel relief without the pressure of the thumbs. I now avoid the use of nitro-glycerin where I suspect the person has recently been drinking. In all such cases I have had success in removing desire for alcohol by giving one-thirtieth of a grain of strychnia, combined with iron and chlor. ammonium (the iron is better borne when combined with the ammonium), given every three to six hours, as required.

CASE 9.—*Opium-poisoning.*—An elderly lady swallowed by mistake a large quantity of laudanum. In less than thirty minutes she was unconscious. Arriving shortly after sleep had set in, I found the jaws set firmly, while the rest of the body was limp. Pulse feeble and rapid. Respiration already down to 8 per minute. Hypodermic injections of atropia brought the respirations after an hour up to 9, and in another hour up to 10. The pulse on the other hand gradually grew more feeble. I discovered the cause of this to be that there existed a pronounced case of mitral insufficiency (I learned later that the heart disease was of twelve years' progress). Three hours later the respirations were 14 per minute. In all other respects the patient was rapidly nearing the close of life. The sleep was as deep; all parts of the body were relaxed; the limbs were cold up to the body; the pulse could hardly be felt at the wrist. The limbs were rubbed with hot applications, while I injected several syringefuls of pure alcohol (90 per cent.) into her arm, in the hope that the alcohol might keep the heart beating. Another hour and we had to go to the neck to feel any pulsation. I now dropped between her parted lips *three* drops of nitro-glycerin, 1 per cent. solution. Within a few minutes her pulse was bounding full at the wrist. Ten minutes more, and she stirred for the first time since swallowing the laudanum. In half an hour she was talking to us, asking to be let alone, as she desired to sleep; while the friends were insisting on her drinking strong coffee. The next day the only evil effect felt was a severe headache. This is, I think, the first case of opium-poisoning treated with nitro-glycerin.

Case 10.—*Uræmic Coma.*—Mr. S., aged 45, by occupation a tin pedlar, has been afflicted with Bright's disease during the last six years, and catarrh of the bladder for a longer time. The present aggravation of his kidney disease was ushered in by a severe chill at night. He awoke with a pain in his back so severe that I was sent for, but was unable to reach his bedside until 2 o'clock the next day. By this time he was in so deep a stupor as to be aroused with difficulty, even for a moment. His body was cold and clammy; pulse 100, very feeble, thin like a silk thread. From his bladder was obtained one ounce of heavy urine. Having been placed in bed, he was then surrounded with glass fruit-jars filled with hot water, these being renewed every half hour. One drop of nitro-glycerin was given him every fifteen minutes for one hour, and then ordered to be given every hour until I returned four hours later.

My object in giving the nitro-glycerin in this case, where we had the pulse 30 beats above normal without the remedy, was not to strengthen the heart (much as that was desired), but that we might relieve the congested kidneys by opening wider the arterioles throughout the body, and thus enlarge the blood reservoir outside the kidneys. The engorged vessels of the kidneys were already extended to their utmost, and hence would not come under the influence of the nitro-glycerin. Four hours later I found him with his mind clear, he greeting me cheerfully as I entered his room; pulse 100, but full; body dripping with perspiration; kidneys had excreted a pint of urine; very little pain in his back, but a "sore feeling on his sides and arm." An examination of the place indicated revealed that the coma (stupor) had been so deep as to deaden all sense of feeling, and while in this state one of the bottles of hot water rolled against his side and arm, burning them nearly to a blister.

Case 11.—*Nephritis.*—In several cases of chronic inflammation of the kidneys I have seen benefit result from the use of nitro-glycerin. In one case of a year's standing, the urine in two years became free from casts and even the faintest trace of albumen, and has remained free. The patient has been apparently a healthy man during the last five years.

Case 12.—*Death-beds.*—When we are called to rescue persons suddenly stricken with death, there is frequently the question in our mind: Is this death or only the approach of death? If the case before us is not death, but is the last faint throbbing of the heart, too feeble to be noticed by even trained ears, then nitro-glycerin, in the rapidity of its action, might cause an over-burdened heart to suddenly leap into new life. In one case, where the heart was growing rapidly feeble, the pulse ceasing, nitro-glycerin caused the heart to be relieved, the pulse to return, the patient to revive and live until the next day, when, while speaking to some friends, the heart suddenly ceased beating.

Drowning.—In cases where persons are apparently dead from drowning nitro glycerin is of great benefit, the heat to the body and the expansion of the chest not being neglected.—*Lancet.*

SALOL IN THE GASTRO-INTESTINAL DERANGEMENTS OF CHILDREN.

By Walter Lester Carr, M.D.

With the increased knowledge of the part that micro-organisms take in the origin of disease, our attention has been directed to the treatment of morbid conditions by agents that will destroy these low forms of life, or at least interfere with their development and growth. The antiseptics that are used in surgical procedures have been given trials by internal administration, and some of them have earned a permanent place in the treatment of diseases of bacteriological origin, as witness the administration of corrosive sublimate in diphtheria and of creasote in tuberculosis of the lungs.

More recently the condition of the alimentary tract in certain forms of catarrh has seemed to indicate, from our present view of the causation of these disorders of digestion, a trial of agents that will prevent the activity of micro-organisms. The advent of the synthetical drugs, especially of the carbolic acid series, has given an impetus to the treatment of disturbances of the alimentary canal sufficient to place us on a plane beyond that which we occupied when an opiate was considered the only drug to be used in a diarrhœa.

Physiological knowledge and pathological investigation are leading the way in the furtherance of a more advanced and scientific treatment of disease, and while every new drug does not deserve a permanent place in the Pharmacopœia, it at least merits our attention if its use produce any good effects. With the approach of the hot weather, a medicinal agent that will be of any service in relieving gastro-intestinal disturbances, especially in children, is worthy of our investigation.

Salol is one of the latest of the synthetical compounds that has been given to the profession for use in the disturbed functions of stomach and bowel caused by changes in the food, the formation of ptomaïnes and other products of decomposition and fermentation.

Salol, or the salicylate of phenol, was discovered by M. V. Nenck. It is a white powder, with an aromatic odor, but no taste. It is insoluble in water, soluble in alcohol, and slightly soluble in all organic fluids of an alkaline reaction.

It is made by substituting one atom of hydrogen of salicylic acid by the radical phenyl. Tate thinks that commercial salol contains thirty-six per cent. phenyl.

Administered by the mouth salol is probably not changed until it reaches the small intestine, where it is split up by the action of the pancreatic juice into salicylic acid and sulpho-phenol, which are eliminated through the urine. "The production of this decomposition in the intestine will explain its value as a powerful disinfectant in intestinal affections."

Lombard makes mention of this action of the pancreatic juice on salol, and that the activity of the drug depends more on the quantity of the pancreatic juice than on the amount of the drug. He instances the fact that, if the pancreatic duct be tied and the juice be cut off from access into the intestine, the drug remains without effect. In pathological conditions, therefore, where the quantity of the pancreatic juice is increased or diminished, the physiological action of the drug will vary accordingly.

The elimination of the drug in the urine causes it to assume a brownish or a dark-brown color (carbolurin), which, upon the addition of liquor ferri sesquichloridi, changes to a violet shade.

Osborne writes: "I have found 10 grains to be the smallest single dose that would produce the slightest darkening of the urine, and that dose but rarely. I have obtained a distinct reaction in the urine after only 1 grain was taken, showing the positiveness of salol breaking up in the intestine into its constituents and distributing its salicylic acid through the organism."

The experiments made with salol in cultivation broths have led Dujardin-Beaumetz and others to declare that salol is not an antiseptic, but it is probable that the negative results shown by salol in preventing bacterial development in tests are due to the insolubility and inertness of the drug unless broken up into its constituents.

The clincal value of salol in intestinal disorders appears to be uncertain, as observers are not agreed as to the effects obtained.

Osborne thinks that in 22 cases in which he gave the drug he did not have a single failure.

McCall used it with success in a severe case of colitis, with bloody, mucous stools.

Vansant reports eleven cases, two of them children, where the salol was administered, generally with bismuth, because of the gastric symptoms. All did well.

Goelet writes that the diarrhœa and dysentery of children in summer are more promptly relieved by salol than by anything else.

Brothers was not fortunate, for of 16 cases, all children, who afterwards reported, only three were positively cured.

Eichberg, after a trial of salol in various forms of intestinal troubles, but not in children, concludes that naphthaline is more efficacious in the same conditions.

During the past eighteen months the writer has made a trial of salol in 35 children who have been seen at the Out-Patient Departments of Bellevue and St. Mary's Hospitals. Unfortunately, it is impossible to give exact returns of these patients because the mothers of the children often failed to report after the first treatment. It may be assumed that they were not worse, or they would have been brought back.

The drug has been used in all the disorders of the stomach and intestine common to children, but with the most success in the cases of acute gastro-enteritis caused by improper diet or from temperature changes.

The dose and the mode of administration vary somewhat in different cases; the preference being to give the salol alone unless there is some particular reason for combining it with another agent. If the symptoms are those of acute gastro enteritis with the vomiting of milk, or of other food, and the movements from the bowels are ill-smelling, loose, and quite frequent, the administration of salol, while maintaining perfect rest of the stomach and bowels, will be all that is required. Should the vomited material contain bile and the stools have a lumpy, clay-like appearance, or be streaked with bile, the addition of a small quantity of calomel or of mercury and chalk, will bring about a quicker relief. This may be explained, partially, by the effect of the mercurial on the obstructed ducts of the liver and pancreas.

When the movements of the bowels become frequent and the discharges serous, the effect of the salol, besides the neutralization of the disagreeable odor, seems to be almost negative. It is seldom that the watery motions are lessened by the salol unless given in combination with opium or bismuth.

In dysentery and severe colitis salol exerts very little control on the tenesmus and bloody passages.

The dose of salol will depend much upon the requirements of the case.

For children under six months one-half grain every two hours for three or four doses will be found sufficient; between the ages of six and eighteen months half a grain to a grain and a half; two years a grain and a half to two grains will usually be efficacious. The drug is best dispensed combined with some inert powder. Children take it readily if it is placed on the tongue or in a spoon. It never, so far as the writer is aware, causes toxic symptoms or any of the irritation of salicylic acid.

Abstinence from food that would continue the irritation of the stomach is of the same importance in the employment of salol as in the treatment of all disorders of digestion in children.

The conclusions drawn after the use of salol indicate that it is an easily administered, safe drug in the first stage of acute gastro-enteritis in children, and in the more chronic forms of entero-colitis, accompanied by slimy, bad-smelling evacuations. In the acute condition it is necessary to keep the stomach at rest and administer two or three doses of salol within five or six hours. For the more chronic state of catarrh it is best given in somewhat larger doses before meals. In frequent serous discharges and in colitis the salol does not produce the same good results as in the cases mentioned above, and its effect is uncertain, not being so rapid or so sure as an opiate.

In dysenteric disorders it cannot be relied on.

It seems, then, that salol acts best in morbid conditions due to fermentation and decomposition in the stomach and upper bowel, and that it diminishes in power as it passes through the large intestine.—*Archives of Pediatrics.*

ON THE RAPID CURATIVE TREATMENT OF CYSTITIS IN WOMEN.

By THOMAS MORE MADDEN, M.D., F.R.C.S.ED., etc.

The disease to the treatment of which I desire to invite your attention for a few minutes, namely, cystitis in women, is not only one of the frequent complaints that come before us in gynæcological practice, but is also admittedly most intractable to the methods generally relied on for its relief. Moreover, too often this condition, as Dr. Emmet has well observed, occasions an intensity of suffering both of mind and body, unequalled by any other infirmity to which the human body is subject. I therefore need offer no apology for here bringing under your consideration a method which I believe to be new, and which I know by experience to be generally successful in its rapid curative treatment.

Within the past year I have found my former contention with regard to the prevalence of cystitis in women, as well as the advantages of the method of dealing with such cases referred to, borne out by the fact that twenty-eight instances of this kind have come under observation in the gynæcological wards of my hospital; and that in nearly every one of these cases the patient was discharged free from the disease, which in some of them had resisted years of other treatment.

Causes of Female Cystitis.—As met with in our special branch of practice, cystitis frequently occurs as a complication or consequence of vulvular or vaginal inflammatory conditions—vulvitis and vaginitis, more especially when of gonorrhœal origin; or it may be due to mechanical causes, uterine flexions or displacements, and fibromata. Occasionally it results from the extension of renal disease, or from the irritation of gravel or calculi; as well as from cold, local injuries, reflex irritation, or simply from long delay in complying with the call of micturition.

Symptoms.—In women cystitis is, not only from the special causes incidental to the sex, more frequent than in men, but is also more urgent in its symptoms and more liable to lead to grave pathological consequences than is the case with the same disease in the latter. These symptoms and sufferings may, perhaps, be best illustrated by the history of a typical case of this kind.

F. G., aged 18, was admitted into St. Agatha's Ward, suffering from persistent, teasing, suprapubic pain, extending throughout the pelvis, and giving rise to tenesmus, as well as to almost continual desire (night and day) to pass water, with little or rather no relief on each occasion of so doing, micturition being attended with increased pain, straining and inability to void the last drops of urine. These symptoms had endured for nearly two years before admission, and had not been mitigated by the treatment employed during the time. This result was apparent in the physical appearance of the patient, who, from a plump, well-conditioned, good-looking girl, as we were assured she had been before the disease commenced, was now reduced to a wretched, careworn, cachectic-looking creature, to whom life was a misery. On examination the urethral orifice and canal were found patulous, and the mucous membrane extruding in a state of hypertrophic ectropium through the gaping meatus. The lining membrane of the bladder was in a similarly diseased condition, and its cavity and walls were so contracted and irritable, that it was not without occasioning considerable pain that we could inject an ounce or two of bland fluid, which was immediately ejected with spasmodic force. This is no over-wrought picture of a well-marked case of cystitis, such as may every day be met with in the gynæcological wards of any hospital. Moreover, the condition described is one that may, I believe, in most instances, be effectually and permanently relieved, as the case just described was, by a facile and rapid method of treatment, and without the necessity of resorting to the formation of an artificial vesico-vaginal fistula.

General Treatment of Cystitis.—Before describing the method now referred to, I may say a few words with regard to the general principles which should guide our management of these cases, as well as on the ordinary plans of treatment and palliative measures generally recommended in cases of cystitis in women. In the first place, then, it is obvious that in this, as in every other disease, our primary business is to ascertain and to remove, if it be removable, whatever may be the exciting cause of the morbid condition of the bladder. Thus, if the disease be dependent on extension of vulvar or vaginal inflammation, either gonorrhœal or non-specific, this must be at once allayed by appropriate treatment. If the cystitis be due to the mechanical pressure of a displaced uterus, this should be rectified by a suitable pessary. In the same way the weight of a uterine fibroid pressing on the bladder, if it cannot be otherwise got rid of, must be at least lifted well above the pelvic brim, and there maintained by the means which were pointed out in my "Lectures on Uterine Fibromata." If vesical calculus be present, or if, as should be ascertained by careful examination of the urine, renal disease exists, and has extended from the kidneys along the uterus, it will be useless to attempt the topical treatment of the consequent cystitis until in either instance its cause has been removed.

Presuming, however, the case to be one of uncomplicated cystitis, we have then an abundant choice of suggested remedial measures which (save that advocated by Dr. Emmet, to the grave objections to which I shall subsequently refer) are all, I believe, equally useless, as far as probability is concerned, of thus curing any extreme case of cystitis. Nevertheless, some of these measures are unquestionably of value as palliative expedients, and may possibly even prove curative in exceptionally mild cases of the disease. Of these the most generally useful in this way are long-continued warm baths, washing out the bladder through a double catheter with plain warm water, thin flaxseed tea, or a solution of boro-glyceride; conjointly in all instances with absolute rest in bed, free use of diluents, together with the administration of the old-fashioned Dover's powder in small, frequently repeated doses, as the best opiate in these cases; and lastly, above all, by the use of boracic acid in 10 or 15-grain doses three or four times a day, by which the generally fœtid ammoniacal urine is deprived of its fœtor and rendered less irritating to the endo-vesical mucous membrane.

Curative Treatment of Cystitis.—The measures just referred to, as already observed, may relieve, but *per se* will not cure well-established cystitis, nor am I aware of any method by which this result can be obtained except by primarily giving the diseased lining membrane of the bladder and its submucous muscular walls absolute physiological rest. This may be secured in either of two ways, namely, first, by that advocated by Dr. Emmet on the suggestion of the late Dr. Marion Sims, which consists in the formation of an artificial vesico-vaginal fistula through which the urine may drain away as fast as secreted, and by the consequent removal of the immediate source of irritation to the unhealthy and hyperæsthetic endo-vesical mucous membrane thus affords the patient a fair chance of escape from ultimate extension of the disease to the kidneys. The objections to this plan of treatment are, however, so grave as to render any rational alternative that may be suggested for attaining the same object by less heroic means deserving of fair consideration and full trial. These objections are, first, the general difficulty of keeping the fistulous opening patulous for a sufficient time to allow the diseased bladder to regain its normal condition; secondly, the irritation often occasioned by the button commonly employed for this purpose; and thirdly, the more serious trouble, which we meet with in some exceptional instances, of closing the fistulous opening when the desired object has been attained, and the consequent misery resulting from this mischance, by which the patient's last condition may thus possibly be rendered worse than her former state.

For these reasons I have abandoned this operation, and believe that we may obtain all its advantages more easily and more safely, simply by so thoroughly dilating the urethral canal with the instrument exhibited as to enable us to pass the index into the bladder, and thereby paralyze the contractility of the sphincter or of the canal for a time, which may be indefinitely extended by repeating expansion in the same way as often as may be necessary. It may, moreover, be advisable in some instances to remove the proliferating vesical mucous membrane by the cautious employment of a dull wire curette, such as that now shown, which I have used with advantage in cases of this kind. And, lastly, whether the curette be required or not, the method of dilatation just described should, in all cases, be conjoined with the topical application of carbolic acid to the mucous surface. The latter is best employed in the form of glycerine of carbolic acid of the "Pharmacopœia," which is quite strong enough for this purpose, and introduced by an ordinary stilette, armed with a piece of absorbent cotton saturated in the application, and passed through my dilator so as to avoid any of the acid being brushed off in the canal until it reaches the fundus vesicæ, where it should be retained for a couple of minutes until every part of the vesical wall contracts firmly upon it. The urethral canal is then to be similarly brushed out by another application of the carbolized glycerine. The pain caused by this procedure may be prevented by previously introducing in the same way a 10 per cent. solution of cocaine. I have only to add that, according to my experience, the plan of treatment now recommended seldom requires to be repeated more than two or three times, at intervals of a week, to effect a cure of even the most aggravated cases of cystitis in women.

Mr. Jessop (Leeds) reminded the meeting that several years ago Mr. Teale (Leeds) advocated the treatment of vesical irritation by dilatation of the urethra alone, without, that is, the application of any remedial measures to the interior of the organ. The cases were not few which, having resisted all topical and medicinal means, would at once yield to the operation of dilating the urethral canal. He himself was in the habit of using the well-known Weiss's three-bladed instrument, and of dilating to such an extent as to admit the introduction of his forefinger through the open blades of the instrument. It seemed probable that the curative result was due to the paralyzing effect upon the sphincter of the dilatation; which led to a temporary rest both of the sphincter and bladder.

Dr. M. A. Boyd said: Any new recommendation as to our means of treating this troublesome affection, we should certainly hail with pleasure. We should feel grateful to Dr. Madden for this new addition to our means of treatment for it. I cannot agree in the statement of the last speaker that dilatation of the urethra alone is sufficient. It is certainly useful, but will not prove sufficient in all cases; and the application to the cavity of glycerine of carbolic acid when the mucous membrane is diseased, as it is in some cases, ought to give relief by its anæsthetic properties.

Dr. Byers drew attention to the value of ascertaining whether any peri-uterine inflammation was to be found in these cases, as, when this was present, treatment with hot douches, glycerine pledgets, etc., would relieve the bladder distress. In other cases the constant use of a small catheter, just passed within the internal orifice of the urethra, was of great value by giving constant rest to the bladder. This plan might act through causing dilatation, but its great feature was that it gave rest to the bladder.

Dr. Heywood Smith hoped that Dr. More Madden would, in his reply, indicate the time recommended for the dilatation of the urethra, for he had seen cases often dilated too rapidly producing laceration of the urethral orifice and permanent incontinence.

Dr. Samuel Sloan remarked that whilst all the speakers agreed on the advantage of dilatation in bladder irritability, Mr. Jessop declared that dilatation alone was sufficient, whilst Dr. Madden insisted on further measures. Now these gentlemen referred to different conditions of bladder. There would be no doubt that in cases of simple irritability with healthy urine and healthy mucous membrane, no amount of other local or of constitutional treatment could avail. Here if you dilate, you at once, and in a great majority of cases, cure the affection. In cystitis, on the other hand, you required additional measures. As to time, Dr. Sloan said he usually occupied about fifteen minutes in the operation, and in no case had he any symptoms resulting.

Dr. Duke had the pleasure of seeing several cases of Dr. Madden's treated by his method with excellent results. He wished to say that it was exceedingly difficult to diagnose the cause of cystitis in young girls, but he had been able to trace the complaint in a few cases to masturbation, where the patient carried the morbid secretion from the vagina into the meatus, and thus set up an acute attack, which was much easier to produce than to cure.

Dr. More Madden, in reply, expressed the hope that the communication just read might induce other practitioners to give a fair trial to the plan of treatment he had recommended; and he ventured to believe that any who thus adopted it would probably come to the same conclusions as those arrived at by his friends Drs. Boyd and Dr. Duke, who, having witnessed his method of treating cases of cystitis, had in the foregoing discussion so kindly borne testimony to its successful results.—*British Medical Journal.*

* * *

INVETERATE PSORIASIS.—Swab the affected parts with oil of cade once daily for a week, after which discontinue a couple of days and reapply.—DR. GREENE *in British Medical Journal.*

EDITORIAL.

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☞ *Original communications are solicited from all parts of the country, and especially from the medical profession of* The Carolinas. *Articles requiring illustrations can be promptly supplied by previous arrangement with the Editors. Any subscriber can have a specimen number sent free of cost to a friend whose attention he desires to call to the* Journal, *by sending the address to this office, Prompt remittances from subscribers are absolutely necessary to enable us to maintain our work with vigor and acceptability. All remittances must be made payable to* Thomas F. Wood, M. D., *P. O. Drawer* 791, *Wilmington, N. C.*

A GREAT STEP FORWARD IN THE PROGRESS OF MEDICAL EDUCATION, INAUGURATED BY NEW YORK STATE.

New York, Pennsylvania, Massachusetts, Maryland, Kentucky, Illinois, Louisiana and South Carolina have held the key of the situation as regards the quality of medical education in the United States, and particularly the first named States, have had it in their power to settle all the requirements necessary for an adequate standard in medical education, and singularly enough they have been the States in which the strongest opposition or the greatest apathy to a fixed standard has been evinced.

It is true the difficulties have been great in the larger and wealthier cities of the Union, where wealthy charlatanry is a power, and we look with all the more gratification upon the action of the New York Legislature in enacting a law that requires an educational qualification as a prerequisite for a degree from a medical college, If this law is faithfully carried out in New York it will be a great step forward, and in this matter the whole country is interested. Next to a law separating the teaching and the examining bodies.' none will be of more value to the profession of the whole country than an examination in general education before a medical degree is granted.

The law reads: "Before the Regents of the University of the State of New York, or the Trustees of any medical school or college within this State, shall confer the degree of Doctor of Medicine upon any person who has not received a Baccalaureate degree, in course from a college or university duly authorized to confer the same, they shall require him to file with the Secretary or recording officer of their university or college, a certificate showing that prior to entering upon the prescribed three years study of medicine, he passed an examination conducted under the authority and in accordance with the rules of the Regents of the University of the State of New York, in arithmetic, grammar, geography, orthography, American history, English composition and the elements of natural philosophy; and such certificate shall be signed by the Secretary of the Regents and countersigned by the Principal or Commission conducting the examination."

THE FUTURE SERVICE IN OUR ASYLUMS FOR THE INSANE.

Several years ago the JOURNAL pointed out the defect in our Asylum management, in the neglect of providing for a succession of skilled physicians. This remedy was partially applied, but not in the spirit in which we made the suggestion. We have avoided making any commentary on the late troubles which have occurred at the Raleigh Asylum, believing it to be best to leave the whole matter to the judgment of the profession, who had facilities for seeing the newspapers with all the details. We feel, though, that we can enter into a discussion of the future service of our Asylums without any personal strictures, or without stirring up any of the ill-feeling which may have taken possession of the immediate actors in recent events. This question is superior to the individual interests of any one, but vitally concerns the welfare of the insane now and for future time.

The time may come in the history of any of our asylums when a competent man could not be found to take charge. It does not necessarily follow because a man is a good physician that he can conduct an asylum where expert knowledge is at once required. So far, in the history of our asylums, there have been only two Superintendents who have entered upon the responsibilities with any previous training, all the rest have received their education by actual experience, at the expense of the State, too, in one sense. Now, psychiatry must be a science of some consequence, if we have not been too proudly doting upon the expert acquirements of American alienists; there is a depth of learning in this business of caring for the insane, and the State ought to see to it that there are relays of young men coming on who can be accepted at once as experts, forever putting at rest the difficult tasks laid upon Boards of Directors.

The plan we suggest is as follows: The Raleigh and Morganton Asylums should each have two or three junior assistants, in addition to the present medical officers, and the Goldsborough Asylum two. These young men should be selected by competitive examination by a Board chosen from the Medical Society of North Carolina, the examination being as to morals, physical ability, medical education and special inclination for the peculiar work. For the consideration of a support and a salary of from five to six hundred dollars a year, they should agree to serve not less than three years, it being understood that they would be promoted in the order of their acquirements and adaptability for the work as vacancies occurred, these qualities to be determined by a Board of Examiners or committee chosen by the Directors of the Asylum.

This is the general outline of the plan, and we believe it would work well if conscientiously carried out. The State must either make her selections from non-residents in the future, or provide for the training of young men in order to secure experts in succession.

The expense attending this new departure would be insignificant compared with the ultimate good. It is very likely that some of our Asylum officers may have a more feasible plan than this, and if so, we would like to hear what it is, that the subject may be fully discussed before the session of the next Legislature.

AMERICAN PUBLIC HEALTH ASSOCIATION IN BROOKLYN, AND A SUGGESTION FOR NEXT YEAR.

This Association has for several years past met in the West, making it inconvenient or impossible for Eastern people to take advantage of its sessions. This year the wise selection was made of Brooklyn as a place of meeting, and we know from the interest that the profession of that city, led by Dr. Raymond, have given for the past year in its objects, that this meeting will be exceptionally good. It is no secret that the Association for some years has missed the Eastern blood, and the possible accession that will be made this year, will be very advantageous. We give a schedule of the meeting below:

"The Seventeenth Annual Meeting of this Association will be held in the Hall of the Brooklyn Institute, Washington and Concord streets, October 22, 23, 24, 25. Addresses of welcome will be delivered by Hon. Alfred C. Chapin, Mayor, on behalf of the city, and by Alexander Hutchins, M.D., on behalf of the Medical Profession. The following topics have been selected for consideration at the meeting: 1. The Causes and Prevention of Infant Mortality. 2. Railway Sanitation; (*a*) Heating and ventilation of railway passenger coaches; (*b*) Water supply, water-closets, etc.; (*c*) Carrying passengers infected with communicable diseases. 3. Steamship Sanitation. 4. Methods of Scientific Cooking. 5. Yellow Fever. (*a*) The unprotected avenues through which yellow-fever is liable to be brought into the United States; (*b*) The sanitary requirements necessary to render a town or city proof against an epidemic of yellow fever; (*c*) The course to be taken by local health authorities upon the out-break of yellow fever. 6. The Prevention and Restriction of Tuberculosis in Man. 7. Methods of Prevention of Diphtheria, with Results of such Methods. 8. How far should Health Authorities be permitted to apply known Preventive Measures for the Control of Diphtheria. 9. Compulsory Vaccination. 10. Sanitation of Asylums, Prisons, Jails and other Eleemosynary Institutions. Exhibition of sanitary goods and appliances in another large hall close by."

We have not conferred with the medical profession and citizens of that city interested, but we suggest Asheville as the next place of meeting. Asheville and the region about it has attracted the attention of sanitarians for many years, and if the citizens will consult their interests they can hardly hit upon a plan that would be more fruitful in results for the future of their town. The sanitary impulse that Memphis received was from this Association, and if Asheville could get anything like that much help it would easily be made to rank with the most desirable sanitarium in the country.

Let Asheville send some of her best citizens, who are interested in her future sanitary welfare to Brooklyn, and invite the Association to meet there October or November, 1890, and we believe it will be favorably considered. This JOURNAL and the State Board of Health will unite to accomplish this desirable end.

SEASONAL NOTES ON TYPHOID FEVER—ACETANILID.

Every season shows some variations in the form and course of typhoid fever. In the eastern counties we have few of the cases which would be classed as typhoid, after the classical descriptions, occurring during a season, but we believe that if Ehrlich's test is going to enable us to distinguish the disease positively, we will discover that many of the cases will prove to be genuine enteric fever, which are now doubtful because of the absence of rose-colored spots, diarrhœa and ataxic symptoms, these latter being most commonly wanting.

We desire to speak of some of the anomalies of the season. One patient in the practice of a confrère sickened and died on the sixth day, the peculiarity in the case, besides its rapid termination, being blebs of pemphigus on several parts of the body, especially the elbows.

Another patient, who was treated by the writer, nineteen years ago, for typhoid fever, was seized again with the disease, not only responding to Ehrlich's test, but having the characteristic temperature curve, but no rose-colored spots.

Another case was characterized by epistaxis from the beginning, the stains on the handkerchief and bed-linen showing the poverty of the blood. In the third week an intestinal hæmorrhage of about three pints occurred, reducing the temperature sub-normally, but marking also the beginning of the return to convalescence. There were no ataxic symptoms whatever in this case.

In another case, that of a child about 10 years of age, there was nothing unusual until the fever subsided, in the fourth week, when purpura hæmorrhagica supervened. There was bleeding from the gums, from the nose, and finally hæmaturia. The purpuric spots appeared first on the feet and legs, then on the arms, then on the trunk, then in the sclerotic.

Purpura hæmorrhagica as a sequel of typhoid fever cannot be very common, for in running through Index Catalogue we came across only five titles under the head of "Complications and Sequelæ of Typhoid Fever" touching upon it: (Constant purpura hæmorrhagica following typhoid, 1836; E. H. Greenhow, case of typhoid fever with hæmaturia, Trans. Clin. Soc., London, 1880; W. Hartigan, purpura hæmorrhagica with hæmorrhage from the bowels, *Irish Hospital Gazette*, 1874; Henrard, purpura hæmorrhagica, *Archives Med. belges*, 1865; Paroddi, Geneva, 1857, Epistaxis bleeding from gums, etc.; C. Pirtle, purpura gangrenopsis succeeding typhoid fever, 1850.)

When it is remembered how impoverished the blood is from typhoid fever, it would not be surprising to have purpura hæmorrhagica a common sequel instead of a comparatively rare one.

This writer determined that, as far as possible, he would refrain from the use of antipyretics this season, and allow the disease to take a somewhat uninterrupted course, but he was convinced that the antipyretics were very desirable to reduce nervousness of the patients, and he believes that the use of acetanilid, which was the only one employed, made a break in the temperature curve, and if not shortening the disease, surely giving the patient great comfort. We are decidedly of the opinion that it is the best practice to resort to antipyretics to keep the temperature below 103 F., and any rapid reduction and diminished cardiac energy can easily be brought up by some alcoholic, which for many other reasons is desirable.

SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

The following is a list of the officers of the session of the Southern Surgical and Gynecological Association, to be held in Nashville, Tenn., November 12, 13 and 14, 1889:

OFFICERS.

President—Hunter McGuire, M.D., LL.D., Richmond, Va.

Vice-Presidents—W. O. Roberts, M.D., Louisville, Ky.; Bedford Brown, M.D., Alexandria, Va.

Secretary—W. E. B. Davis, M.D., Birmingham, Ala.

Treasurer—Hardin P. Cochrane, M.D., Birmingham, Ala.

Judicial Council—John S. Cain, M.D., Nashville, Tenn.; W. T. Briggs, M.D., Nashville, Tenn.; J. M. Taylor, M.D., Corinth, Miss.; De Saussure Ford, M.D., Augusta, Ga.; Virgil O. Hardon, M.D., Atlanta, Ga.

Chairman Committee of Arrangements—Duncan Eve, M.D., Nashville, Tenn.

* * *

DISINFECTING INFECTIOUS FÆCES, such as of persons having cholera, typhoid fever or other contagious diseases, has occupied the time of Uffelmann, and as a result of his studies he publishes the following, which merits attention as it is the first work of its kind giving definite directions: To thoroughly disinfect liquid or nearly liquid fæces, the author recommends to mix them either with an equal amount of sulphuric acid diluted with 2 parts of water and allow to stand for 2 hours, or to mix them with an equal volume of hydrochloric acid diluted with 2 parts water and allow to stand for 12 hours. If it is desired to use 5 per cent. carbolic acid, an equal part should be added and allowed to stand 24 hours; if sublimate solution, an equal volume of a solution of 2 g. sublimate, 0.5 g. hydrochloric acid to 1000 c. cm. water is allowed to remain in contact with the fæces for at least half an hour, but rather 24 hours. Quicklime recommends itself sometimes for practical reasons, but a fresh preparation is necessary and in quantities of 2.5 g. to 100 c. cm. and 24 hours' contact. The quantities of the above disinfectants to be used to disinfect more solid fæces and the length of time contact is necessary, is yet to be ascertained. Hot water, which has been proposed as an appropriate disinfectant, is not reliable.

REVIEWS AND BOOK NOTICES.

INEBRIETY: ITS ETIOLOGY, PATHOLOGY, TREATMENT AND JURISPRUDENCE. By NORMAN KERR, M.D., F.L.S. Second Edition. London: H. K. Lewis, 136 Gower Street, W. C., 1889.

Few of our readers have not already heard of the writings and speeches of the author of this volume, but there may be many who do not know of this volume. It is a small 8vo. of 470 pp., divided into 23 chapters and an appendix, with marginal paragraphic synopses, greatly facilitating consultation.

The caption of the first chapter—Inebriety a Disease—gives the key and foundation of the whole treatise, and it has "reference only to those in whom either the habit of drinking, or some inherited or other cause, has manifestly set up the diseased condition we designate as inebriety, the characteristic symptom of which is an overpowering impulse to indulge in intoxication at all risks." In the same connection he says: "I trust no one will imagine for a moment that I desire to weaken the force of clerical rebuke of the vice and sin of intemperance, or to impede in the least the noble work in the rescue of the intemperate by the army of Christian abstainers, of whom I am not ashamed to own myself."

Dr. Kerr has given us the word Narcomania, which he holds as the equivalent of inebriety, or rather, Narcomania is a mania of narcotism of every kind, an inexpressibly intense involuntary morbid crave for the temporary anæsthetic relief promised by every form of narcotic." "The morbid impulse and crave of inebriety are not for inebriating agents for their own sake, but for the temporary relief of the inebriate nervine agency afforded by them."

The forms of inebriety described by the author are embraced in five chapters, and is a faithful portraiture, much of which can easily be duplicated from the experience of a physician of a few years' practice. The etiology and pathology of inebriety are next considered, and here we find grouped together a vast amount of material which will be food for thought for many who are anxiously studying the question. Even for those who cannot agree with the author about the cause and morbid phenomena of the so-called disease, may be able to accept it as a working theory.

When the author comes to treatment, we can follow him with more confidence. He evidently believes in the entire abstraction of alcohol in every shape, and declares that "all alleged" cures are "deficient in nerve restoration and moral renovation—that nostrums are not needed—moral and physical treatment are required—his whole course being conservative and practical. The acidulated infusions and deductions of bark as a tonic, especially one known as "cinchona febrifuge," made by exhausting the dry bark with successive portions of dilute hydrochloric acid, and precipitating the resulting liquor with excess of caustic soda, the precipitated alkaloids collected on filters, washed, dried and powdered. This product is then dissolved in a quantity of acid sufficient to take up the alkaloids, filtered from some insoluble coloring matter, and the solution again precipitated. If it is powdered and taken in lemon juice, it is a pleasant drink. We think, practically, the author might, by a shorter process, administer muriate of quinine for the same purposes. The writer can add, that he has seen one formerly incorrigible "inebriate" filling the measure laid down by Dr. Kerr for the disease, cured of the liquor crave by the administration of the decoction of quassia.

The medico-legal aspects of inebriety can be usefully studied, because here is set forth the struggle which the friends of the cause have had in securing the appropriate legislation. The same struggle, with the difference of the laws of the two countries, may be expected when we come to bring the matter of the care of the inebriate before the Legislature of North Carolina, and familiarity with the British and Colonial regulations may furnish much that is valuable.

We put Dr. Kerr's book aside with the feeling that if we were to spend much more time upon it, we would be converted to his way of thinking, and this must be considered as high a compliment as we can give it.

"THE PHYSICIAN HIMSELF." By D. W. CATHELL, M.D. Ninth Edition. J. A. Davis, Philadelphia, 1889.

Some very good judges of books in their reviews on the first issue of this volume regarded it as a jejune performance; but there has been no more successful venture than this in many a year. Forced to be his own publisher, if we remember correctly, the author has lived to see his little foundling able to hold its own among its bigger brothers, and now there is hardly a medical library of 50 volumes which does not boast of "The Physician Himself," almost surely he cannot be a reader of this JOURNAL.

It is not necessary in this latitude, where there are so few homœopathic doctors, to quote what Dr. Cathell has to say about this medical sect, but we give one paragraph :

"Now, any man, with but one eye, even, can see why there will be protestant bakers and catholic gardeners, baptist laundresses and quaker boot-blacks, vegetarian blacksmiths and presbyterian shoemakers, spiritualist bankers and masonic carpenters, odd-fellow bricklayers, republican barbers and democratic bakers, homœopathic doctors and swedenborgian undertakers, as long as there are people who wish to employ dogmatists in these things; but certainly no sensible person wants an allopathic physician, consequently no thinking man professes to be one, and we should not let our enemies put us in that cage; but there is, and ever will be, everywhere, a demand for RATIONAL physicians who will do for their patients whatever under heaven seems best, without regard to creeds and pathies. Away from us, then, at once and forever, with the false title, "Allopath."

To the physician who has discovered that there is something else besides dry book learning needed to make him a desirable visitor at the bed-side, we commend this volume, that he may assimilate some of the ready crystalized worldly wisdom which otherwise he may be many years acquiring by natural processes. This new edition is now sold at $2.00.

PUBLIC HEALTH PAPERS AND REPORTS. Vol. XIV., presented at the Sixteenth Annual Meeting of the American Public Health Association, Milwaukee, Wis., November, 1888. Concord, N. H., 1889. Pp. 306.

This volume may not be up to the usual fullness and excellence as regards the matter contained therein, but not at all below its fellows in typographical appearance. In no sense do we mean that this is not a very valuable issue of the series of transactions, and we desire to say to those who know nothing of the work of this Association, that it is the foundation and origin of the sanitary teaching and practice of this country, and must be the text-books of sanitary students for years to come.

From the contents some of the more important topics may be selected to illustrate the scope and practical character of the contributions: "Proposed Plan for the Disposition of Night Soil, Garbage, etc., at St. Paul, Minnesota, by Henry F. Hoyt, Commissioner of Health"; "Problems in Regard to Yellow Fever and the Prevention of Yellow Fever Epidemics, by Jerome Cochran, M.D., State Health Officer of Alabama"; "The Outbreak of Yellow Fever at Jacksonville, Miss., by Wirt Johnson, M.D., Secretary Mississippi Board of Health"; "Some Observations on Yellow Fever and Its Habitudes, as opposed to the Fallacies and Dangers of Personal Quarantine, by A. N. Bell, M D."; "The Origin and Prevention of Tuberculosis, by D. E. Salmon, D.V.M."; Several papers describing the quarantine of the Middle Atlantic Coast; that of Louisiana, of Canada, of Texas, of Boston, and a paper by Dr. J. H Rauch, on "Yellow Fever Panics and Useless Quarantines—Limitation by Altitude and Temperature"; "Garbage Furnaces, and the Destruction of Organic Matter by Fire, by S. S. Kilvington, M.D., Minneapolis"; "Some Observation on the Origin and Sources of Pathogenic Bacteria, by Theobold Smith, M.D., Bureau of Animal Industry"; "The Flushing Tunnel at Milwaukee, by George H. Benzenberg."

Dr. A. N. Bell's observations upon the friendly refuge which Hendersonville offered to the refugees from Jacksonville is justly complimentary, and is made to point an argument which he has maintained vigorously for many years, and with good show of common-sense, that yellow fever "is non-contagious from person to person independent of *fomites*, uncommunicable to places, except under favoring conditions of climate and locality, and the *poison* (without regard to its essential nature) eliminable before culmination by the *vis medicatrix naturæ*, under timely change to healthful surroundings."

In the list of papers above we omitted the report of the Commitmittee on the Pollution of Water Supplies, read by Dr. Charles Smart, U.S.A., but it is a paper that must be read by every one interested in public water supplies. Just one item we wish to reproduce, and ask pardon of the author for so dislocating his well arranged facts:

" When wooden tanks, as at New Orleans, and other Southern towns, are used for the storage [of water] it is a common occurrence for the analyst to find water of poor quality in new or recently cleaned cisterns, while water of a much better quality is discovered in those that have not been cleaned for a year or two, and have a fermenting sediment a foot or more in depth covering their floor. The nitrifying agencies accumulate with the sediment, and, notwithstanding the sediment, they succeed in reducing the organic matter of the water to the inorganic condition. The "sediment is thus an advantage, but the end is better accomplished by keeping it out of the cistern and introducing the bacterial workers through the medium of a layer of clean gravel or sand."

It is only necessary to add in our comments upon the value of this book and the whole series, of which it is a very respectable unit, that the sanitarian who is groping his way without the valuable library which the American Public Health Association has produced, is denying himself essential light, and has not yet attained to the full measure of a first-class sanitarian.

WOOD'S MEDICAL AND SURGICAL MONOGRAPHS.

The August issue contains "The Treatment of Syphilis at the Present Time, by Dr. Maximillan von Zeissl"; "The Treatment of Inebriety in the Higher and Educated Classes, by James Stewart, B.A."; "Manual of Hypodermic Medication, by Drs. Bourneville and Bricon."

We accord these monographs a most hearty welcome, as containing some of the most valuable contributions in current medicine. The three papers in this number of Volume III are of absorbing interest, and especially this manual of hypodermic medication supplies a need in our literature, nothing on this subject having appeared since Bartholow on "Hypodermatic Medication," 1882, and the somewhat popular works of Kane, now almost relegated to the dead volumes of one's library.

The subscription to the "Monographs" is $10 a year or $1 a single number.

CURRENT LITERATURE.

THE USES OF [OIL OF] TURPENTINE AND SCRAPING IN UNHEALTHY WOUNDS.

By W. Mitchell Banks, F.R.C.S., England, Surgeon Liverpool Royal Infirmary, Professor of Anatomy, University College, Liverpool.

Some dozen years ago or more, I was asked by that very shrewd old surgeon, the late Mr. Long, if I ever used turpentine. I said, No. Did I know any surgeons who did? I was obliged to confess I did not; and then he told me that the sooner I used it the better, for there was no better styptic, and no more certain cleanser of old or foul wounds. I have ever since made constant use of it, and have spoken many surgeons concerning it. They all know everything about it, but I have found that they don't use it.

One great reason why turpentine dropped out of common surgical use was the introduction of perchloride of iron as a styptic. I cannot say how the iron acts in a diluted state in arresting uterine hæmorrhage; I know that many obstetricians think highly of it. But, applied strong as a styptic to open bleeding wounds, or as a packing to cavities from which hæmorrhage is coming, I believe it to be the worst styptic that can be used. As a mere stopper of the bleeding I admit that it is very effectual, but then look at the condition of the wound left by it after a few days! It is especially dangerous when employed by the prescribing druggist. I have seen some dreadful hands as the result of its use. Let me give an outline of the sort of case. A boy, carrying a jug, falls and gets a slash across the palm, from which the bleeding is profuse. Rushing to the nearest chemist, that gentleman treats the injury according to the best of his lights. The wound is first swabbed out with perchloride of iron; then a plug of lint, soaked in iron, is jammed into it; and then a pad is put over the plug and a bandage applied firmly over all. In twenty-four hours the pain becomes very severe, and by the second day the boy is feverish and in great distress; so the wound has to be looked at. This is a very painful process, because the dressings stick fast to it. Black masses, difficult of separation, adhere to it over most of its surface, while at other places beneath these are collections of dirty, purulent fluid. No sooner is the black cake taken away than the bleeding commences again, and so the wound is rapidly sponged out, and a fresh swabbing and packing with iron resorted to. Then the pain recommences, the arm begins to swell and feels hot, while red streaks run up it. The patient is in a high state of fever, and almost delirious. At this stage it is deemed prudent to send him to hospital. Now, this is not by any means an imaginary picture. I have seen several such cases, but it is drawn from one in particular, where I remember I had to tie the brachial artery. The palm of the hand was literally torn up with pus and clots, rendered hard by the iron, and was simply rotten. The bleeding being practically stopped by the ligature of the main artery, I thoroughly cleansed the cavity, and lightly packed it with absorbent cotton wadding saturated with turpentine. On the second day the plug came out easily, a thin layer of healthy pus lay beneath it, and the cavity was covered with red, clean-looking granulations.

In opening the urethra in the perineum, it sometimes happens that the hæmorrhage is very sharp. As often as not, it does not occur so much at the time of operation as after the patient has got warm in bed. The only remedy is plugging, and here the turpentine will be found of great service. Again, in severe operations about the rectum for extensive fistulæ, plugging is the best surgical proceeding to arrest bleeding. Sometimes, again, after large putrid abscesses have been opened, very severe hæmorrhage comes from their interior, requiring them to be packed. Now, the use of perchloride of iron under these circumstances is productive at once of a great deal of pain and a great deal of mess. If you use turpentine you will find your plugs come out easily and comfortably to the patient, while the surface left behind is clean and wholesome.

The other day a man came into the ward to show himself. He had an excellent stump from an amputation above the knee, and wanted to see about an artificial leg. Some months previously he came into hospital in a deplorable condition. His knee-joint was hopelessly destroyed, and the tissues all round it were absolutely rotten, with putrid abscesses and sinuses burrowing all about it. He was delirious, with a dry tongue and a high temperature—evidently in a state of septicæmia. Immediate amputation was his only chance, and that a poor one. The actual removal was accomplished with all rapidity, only the main artery and one or two others being tied. The space between the flaps was then loosely filled with lint soaked in turpentine, and the flaps brought down over them without any stitches at all. A towel was wrapped round the limb and the patient put to bed. On the second day the anterior flap was lifted up, the turpentine was pulled out and fresh replaced. After a few such dressings the interior of the wound was quite clean, and the flaps were allowed to flap together, and trained into shape by a light wire splint. If a long time had been spent over the operation, or if the flaps had remained putrid, the man must infallibly have died, so exhausted was he at the time of operation. I have done this several times where it has been necessary to amputate through diseased tissues.

Some agents, like the perchloride of iron, are admirable styptics, and some, like iodoform, chloride of zinc and carbolic acid, are most effective antiseptics; but I know of no remedy which combines the two properties to the same extent as common turpentine, while at the same time acting as a direct stimulant to healthy granulation. The only objection that may be urged against its use is that it may be painful. Its use is attended with much less pain than would be imagined *a priori.* In the case of a clean cut wound it is painful for some hours, but its application causes no suffering at all in the case of old wounds, sinuses, or abscess cavities. The single word of caution in employing it, is to see that it does not come on the skin, which it of course blisters; and most of the pain which I have ever seen attending its use has been caused by careless plugging, whereby the drug was left in contact with the skin.

To sinuses and chronic suppurating cavities or surfaces mechanical surgery has been most advantageously applied, in the way of scraping them clean from the unwholesome granulation tissue which covers or lines them. Many of us will remember that we first became acquainted with this tissue under the name of "Pyogenic Membrane," a name which in itself sounded sufficiently dangerous to prevent any rash meddling with it, and which possibly contributed to the fact that it was always very gently treated by minor caustics or stimulating lotions, in place of being swept away. Volkmann's spoon seems to me to be one of the most useful and modern inventions; of more real service than all the endoscopes that ever were invented. It has revolutionized certain departments of minor surgery. Let us take an instance: A man left the infirmary the other day sound and well. About a month previously he had been admitted with his buttocks riddled with holes. He was the victim of very bad anal fistulæ. He had already been very considerably cut up by an able surgeon, but in spite of that, more abscesses and more sinus tracks had formed, and the old cuts showed hardly any signs of healing. Many weeks had passed in this way. Immediately on admission he was anæsthetized and put in a good light in the lithotomy position. Every track was then followed out, slit up, and scraped, and every old incision scraped clean also. Finally, they were all carefully packed with turpentine lint, and left for two or three days. At the end of that time the plugs all easily came out, leaving red surfaces which rapidly healed up.

By means of scraping a great future is opened out for the treatment of these most troublesome cases, strumous cervical glands. I confess that the old ideas of constitutional taint which I had been taught about strumous glands had so firm a hold upon me that it was a long time before I could be got to appreciate the value of direct surgical attacks upon them. Syrup of iodide of iron, cod-liver oil, and a lotion of some sort was the regulation practice. But now-a-days these same glands are shelled out or opened and scraped with the most admirable results. From being among the most hopeless of the affections seen in the hospital out-patient department, they are now satisfactory objects of treatment. Of old the softened gland was too often allowed to burst spontaneously, the blue, thinned skin then sloughing or curling up and leaving an unsightly cicatrix—a life-long vexation to the patient if a female. But, now, so soon as a gland is soft, we cut into it, scrape it out, fill it with an antiseptic (say turpentine), and then drain it with a little tube. A mere line is all that is seen by way of mark. The sooner all such glands, when once believed to be genuinely tubercular, are either removed or scraped out the better, because there can be no doubt of the direct spread of infection from one gland to another.

How often do we find one side of the neck, all the way down, a mass of hardened glands, while the opposite side is absolutely sound and free from disease! Whether it is a bacillus or not that sets up the mischief, and whether the bacillus gets into the cervical glands *via* the tonsils or by the way of carious teeth, are points not as yet absolutely settled. But at any rate, the theory is a very encouraging one, and helps one to cut out and scrape out tubercular glands with a great amount of faith and hope—which is rapidly being made into certainty by enlarged experience. So that the best method of treating a softening strumous gland with which I am acquainted is as follows: Give the child chloroform. Make a very small hole in the gland with a tenotomy knife, and introduce a small Volkmann's spoon. Scrape out everything that can be got out by scraping, and squeeze and press the cavity. When nothing more can be got out, fill the cavity with a long, narrow strip of lint dipped in turpentine, poking it through the small hole with a probe. At the end of two days pull out the lint and introduce a drain-tube. Pass a needle and thread through the tube on a level with the skin, and then slip over the tube a circular piece of plaster with a hole in the center and having its margin nicked. Cut the tube short off and tie the ends of the thread over the plaster. The tube is then rendered immovable. Over it may be placed a little bit of absorbent cotton wadding dipped in antiseptic lotion, and covered in with a bit of jacquonette. After a few lessons the child's mother or nurse will learn to wash out the cavity with a syringe morning and evening and to apply the dressing, as well as to take out the tube, clean it, and replace it every third day or so. By waiting patiently until the tube is literally pushed out of the cavity, a mere white spot is frequently the only remaining evidence of what has been done. If a depression or dimple remains, it can be afterwards elevated by loosening the cicatrix from the subjacent tissues by a tenotomy knife.

In the excision of joints scraping is of the utmost value. The tedious delays which formerly rendered an excision of the knee-joint, for example, such a wearisome job, are now greatly diminished. With the curved scissors all the thickened gelatinous synovial membrane, which was bound to perish before any healing could take place, is clipped away, while every burrowing sinus is scraped clean, and all suspicious places on the cut surfaces of the bones are punched out with a strong spoon, just as one would punch a decayed bit out of an apple.

The bubo, too, is deprived of many of its terrors. A gentleman came to me yesterday (Tuesday), for instance, with one on each side. From their history and appearance it was clear that they must go on to suppuration. I told him to poultice them and keep at his occupation, which he was most anxious to do. On Friday they ought to be soft in the center. I purpose then giving him an anæsthetic, cutting them across vertically, scraping out the broken-down tissue, and packing them with turpentine lint. My expectation is that he will be at work again about Tuesday with two clean granulating wounds.—*Liverpool Medico-Chirurgical Journal*, July, 1889.

A CASE OF RATTLESNAKE BITE, SEEN TEN MINUTES AFTER THE ACCIDENT—RECOVERY.

By W. M. Memminger. M.D., of Charleston, S. C.

As it is not usual for a physician to see a case of this kind so soon after the infliction of the wound, and as the result of my treatment was so satisfactory, I take this opportunity of presenting the case to my colleagues in the profession:

The patient was a colored laborer of about thirty years of age. While engaged in cleaning some brushes away he was struck in the foregnger of the right hand, the fang of the snake entering the side of the finger, at about the middle of the last phalanx. Seeing that it was a rattlesnake which had bitten him he gave a cry for help, and ran toward some of his fellow-laborers, a distance of about fifty yards. By the time he had reached them he fell, in an unconscious condition. One of the men had the presence of mind to put a ligature tightly around the wounded man's arm, above the elbow, and a half pint of whiskey was poured down his throat; he was then brought immediately to my office—the whole time, as well as I can judge, not being ten minutes before he was presented to me.

The arm, by this time, was enormously swollen; whether from the ligature or from the poison, I do not know, but I think from the poison. The patient was completely unconscious; pulse, 30 to the minute; respiration slow; extremities cold; and involuntary evacuation of the bowels. To all appearances there was no hope, and I must say I was somewhat at a loss to know what to do. I made a free incision, down to the bone, through the wound, cutting both vein and artery of the finger; I then applied Esmarch's tourniquet, just below the shoulder. After having applied this, thinking that perhaps it might be well to try to drive as much blood out of the arm as possible, I applied Esmarch's elastic bandage, beginning from below the tourniquet and descending; this seemed to act well and bled the arm very thoroughly.

There are certain facts just here which I think are worthy of mention. The tissues through which I cut were almost black in color, and the blood extracted from this arm failed to coagulate. In all he bled about a quart. I also resorted to a method which I have seen recommended—that is, of injecting into some of the larger veins a solution of ammonia in water 1–3 : 20 minims every half hour; this I injected into the median basilic, twice during the first hour and afterward one after each collapse. The next theory I carried out was giving the patient the poison gradually.

In about an hour's time after he was brought in to me he had recovered almost entirely—so much so that he was able to sit up and talk with his friends. I now tried the process of giving the poison. I loosened the tourniquet; no sooner had I done this than he fell into an unconscious condition and apparently in as dangerous a state as before. The tourniquet was loosened for, I suppose, not more than three beats of the heart. This alarming and dangerous condition was caused, I presume, from the effects of the poison, the effects of the whiskey having worn off several times during the day, the man being perfectly sober in the intervals between the periods of collapses, produced by the slackening of the tourniquet. This process I repeated six times within seven hours, the patient rallying each time within an hour. At the end of the seventh hour the tourniquet was removed entirely, the wound dressed with boracic acid and the man removed to his quarters, partially delirious.

He was bitten on Saturday morning, and on Monday morning he walked to my office to have his finger dressed. The hand had a somewhat erysipelatous appearance and pained him considerably, but in no other way did he feel any bad effects.

Erysipelas did not set in, and in a few days he had completely recovered. The snake was killed a few minutes after the accident, and proved to be a rattlesnake about two and one-half feet long.—*Medical News.*

DR. WM. R. WOOD, of Scotland Neck, has been chosen to succeed Dr. Grissom as Superintendent of the North Carolina Insane Asylum, and Dr. J. R. Pearsall to succeed Dr. Rogers.

CURRENT NOTES.

For Ringworm.—A 1 in 4 solution of biniodide mercury in iodide of sodium, thus: to ʒ ss. red iodide mercury add half ounce of a 1 in 4 solution of iodide of sodium in water and dissolve. Dilute this strong solution with three parts of water, and apply thoroughly with camel's hair brush: if "too thoroughly" done it sometimes blisters.—*Dr. Illingworth in Brit. Med. Jour.*

Worldly Wisdom.—Professor Charfentier, Paris, gives the following advice to physicians, as to the most prudent answer to be given when asked what they think the sex of the child is going to be: "Reply by asking the mother what she would prefer in the child, and then give it as your opinion the opposite is the one to be looked for. In this way, if the sex turns out to be the one you have prognosticated, you will be thought a wonderful man, while if it proves to be the one the mother has wished for, she will be so pleased that she will easily overlook your error.—*American Practitioner and News.*

The Maximal Doses of New Remedies.—The following are the *maximal* single doses of some of the newer remedies as mentioned in *Merck's Bulletin* for June: Asparagin, grs. 1½; baptisin, gr. ½; daturine, gr. 1-64; duboisine, gr. 1·64; fuchsin, grs. 4; agaricin, gr. ¼; aloin, grs. 4½; antifebrin, grs. 15; apiol, grs. 15; arbutin, grs. 15; guaiacol, grs. 1⅓; iodole, grs. 3; iridin, grs. 3; kairin, grs. 15; naphthalene, grs. 15; phenacetin, grs. 15; resorcin, grs. 45; salol, grs. 20; solanine, grs. 1½; sulphonal, grs. 60; terpinol, grs. 4½; urethane, grs. 75; xylol, grs. 39; paraldehyde, grs. 60.—*Canadian Practitioner.*

Conclusions as to the best Agents for Sterilizing Feces.—The best disinfectants to use are the bichloride with hydrochloric acid, the bichloride with potassium permanganate, and the chloride of lime. Five per cent. solutions of carbolic acid and two-tenths per cent. solutions of the bichloride are unreliable, even when used in the proportion of one pint to every 100 c.c. of dejection. Emphasis needs to be laid on the necessity of thorough disintegration of the fecal matter by stirring with the disinfectant, and on the necessity of allowing the mixture to stand four hours at least before emptying. For continued use the bichloride solutions would injure lead pipe, while if used for a few days only, probably no injury would result. For long-continued use, where the dejections are thrown into a water-closet, chloride of lime is undoubtedly the most available disinfectant. Solutions of chloride of lime should be kept tightly corked and should not be used after they are one week old.—*Amer. Jour. Medical Sciences.*

THERAPEUTIC ACTION OF SENNA PODS.—Dr. A. W. McFarlane directs attention to senna pods, an old remedy, for the relief of constipation. He finds that they have many of the advantages of senna leaves, without some of their inconveniences. The taste and odor of an infusion of senna leaves are nauseous, its administration is so commonly attended by griping, tenesmus and flatulence, that it is seldom prescriped except in conjunction with a carminative. The disagreeable symptoms are more marked if the leaves are infused for a long time. An infusion of the pods, on the other hand, is almost free from taste and smell; certainly it is devoid of the characteristic odor and flavor of senna. It is slower in its action than an infusion of the leaves, but equally eertain. An ordinary dose produces without fail one motion, seldom more, of soft consistence, in from eight to ten hours. It is, in short, a reliable evacuant, free from irritating properties, such as cause griping and flatulence· After a fairly extended experience in its use it has not been disappointing in its utility in any one case; nor has it produced untoward effects. The dose for an adult is from six to twelve pods; for the young and very aged, from three to six. They are best infused in a claret-glassful of cold water for six or eight hours. A liquid extract has also been prepared.—*Lancet.*

EDITOR OF THE "BRITISH MEDICAL JOURNAL" ON DR. T. K. CHAMBERS.—Dr. T. K. Chambers was cut short in his professional career by a lamentable accident—an aneurysm which was refractory to ordinary surgical proceedings, and necessitated amputation of the leg. None of his friends and colleagues at St. Mary's Hospital will forget his cheery courage and manly determination to continue his hospital work, of which the clinical side was very dear to him, as long as his strength permitted. He inherited the best professional traditions from his celebrated uncle. His fresh and vigorous teaching, his picturesque power of expression, his high-bred courtesy and manly frankness, made him very popular with the students in the early days of St. Mary's. "King Tom" he was called, in allusion to his stately bearing, as well as to some of his genealogical pretensions. He was a trustworthy and agreeable colleague, and did much to lay the foundation of the remarkable success of that youngest and very flourishing metropolitan school. Of his writings, the clinical lectures which he somewhat fantastically entitled "The Renewal of Life"—a title which gave umbrage—and his *Manual of Dietary* were the most notable. His later work, done at the General Medical Council, after retirement from practice, was meritorious, laying the foundation of the subsequent steps against repression of practising "under cover," and of the abuse of "unqualified assistants." He belonged to a generation which is fast passing away, but which has left honorable traces in the history of metropolitan medicine.—*Brit. Med. Jour.*

CHLORAMIDE AS AN HYPNOTIC.—At first sight it seems as if we were already provided with a sufficient number of hypnotics, but more careful study reveals the fact that some of them act very slowly, though more prompt in their action, have accompaniments which form contraindications. For any special case we are apt to find that the choice is not as large as imagined. Among many recent hypnotics this one is brought forward with less than the usual flourish of trumpets which herald forth the birth of a new drug. From the account given of its use in Professor Strümpell's clinic, in the *Münchener medicinische Wochenschrift*, No. 31, 1889, it may prove to have some qualities not possessed by the other members of this class. Chloramide is an addition-product from chloralanhydride and formamide. It is a white crystalline body, of somewhat bitter taste; it is decomposed in alkaline solutions, and is, therefore, best given in a slightly acid one. It may be given in wine, as it is readily soluble in alcoholic solutions. It dissolves in nine parts of water. The dose is 30 to 45 grs., and in Germany this would cost about three cents. It seems to be best adapted to cases where there is not much pain; in cardiac affections, in neurasthenia, in diseases of the cord, and in phthisis it has proved serviceable. Out of 28 cases it was efficacious in all but 2 or 3. Compared with chloral, it is reported as being the stronger hypnotic; its taste is better and the accompanying symptoms are less. In one case collapse was observed, but it was not certain that it had been brought on by the drug. A slight pain and fulness of the head after waking seem to be the only after-effects. Thirty grains is a sufficient dose, especially for women; in severe cases, 45 grs. is a suitable amount, given in capsules or in wine. No unpleasant action on the circulation, respiration, temperature, digestion, or on the secretion of the urine was observed. The experience thus far with chloramide warrants further trial, though, like many other remedies, the disadvantages of its use will be more apparent with a very large experience. Dr. Reichmann (*Deutsche medicinische Wochenschrift*, No. 31, 1889) began the use of chloramide by giving doses of 15 grs., and obtained very varying results; with doses of 30 grs. the action was better, and with 45 grs. still more satisfactory. When the drug was administered in the daytime and was not followed by sleep, the patients complained of headache. In severe cases the patients felt tired and sleepy after waking in the morning. It does not seem to have a depressing action on the circulation. In short, this observer considers chloramide a very serviceable hypnotic with few drawbacks. Dr. Erich Peiper has also found chloramide a useful hypnotic. Sleep is induced by it in from a half to one and a half hours, in doses of from 30 to 45 grains. In many patients it causes headache, dizziness or lassitude on the day following its use. For insomnia, with diseases of the cord, asthma, subacute rheumatism, and diseases of the stomach, where there is no intense pain, it has been found serviceable, and is to be preferred to chloralhydrate.—*Deutsche medicinische Wochenschrift*, No. 32, 1889.—*Amer. Jour. of the Medical Sciences.*

THE DOCTOR'S PORTRAIT.—"After his death, a physician's outstanding bills are rarely collectable. Many a one, with a large practice dies, and his estate is found to be not worth administering on. According to Dr. Jarvis' tables, the average of the lives of physicians is fifty-six years. If you begin practice at twenty-four, your active-life prospect will be thirty-two years, and from a thousand to fifteen hundred dollars will represent your average yearly income. Now, were you (through God's mercy) to practice these thirty-two years without losing a single day, and collect (say) eight dollars every day of the time, you would receive but $93,440. Deduct from that amount your expenses for yourself and your family, your horses, carriages, books, periodicals and instruments; your taxes, insurance, and a multitude of other items for the whole thirty-two years (11,680 days), and then, so far from being rich, even after this long and active life of usefulness, in this most important and honorable profession, after a whole life-time of scientific work, mental toil and slavery to our unrelenting taskmaster, The Sick Public; from the days of the dirty, unwholesome dissecting-rooms, through all life's phases, to old age; with not even the 1,564 Sabbaths to call your own—you would have but little, very little, left to support you after you naturally reach the down-hill of life, or are broken down in health and faculties deterioated, and in need of a physician yourself, through worry, anxiety and fatigue in the discharge of your duty."—*Dr. Cathell in last Edition of Physician Himself.*

New Method of Detecting the Impurities in Water.—We make a short note upon a subject we intend to test practically at an early day. It is a suggestion found in "The Sanitarian," September, 1889, taken from the *Utica Herald*, from the pen of Dr. Theodore Deecke, of the Utica Lunatic Asylum. The process is to take from a gallon to half gallon of water to be tested, acidulate one-half with sulphuric acid, and alkalinize the other half with soda or potassa; digest for an hour or two at 110° F.; after cooling shake with a proper amount of ether in order to dissolve animal alkaloids, volatile, aromatic, or fatty compounds; the ether is removed evoporated or distilled, the residue retained for examination. The ether being all evaporated, and there being any of the organic matter from privy filtration, it may be detected by the odor.

A Case of Inoculated Leprosy.—At the Dermatological Congress held recently at Prague, Dr. Arning gave an account of a case of inoculated leprosy in the Sandwich Islands. In 1884 he was permitted to inoculate a condemned criminal, with the latter's consent. The man whom he inoculated had no inherited taint. The immediate result of the inoculation was negative, but four weeks later the man was attacked with an affection resembling subacute rheumatism without fever. The first joint involved was the left elbow, and then other joints became attacked, the attack lasting for four months. Then occurred some swelling of the left ulnar and median nerves, which subsided in the course of six months. Meanwhile there had developed on the scar, at the site of the inoculation, a typical leprosy nodule, from which abundant bacilli were obtained. Since Dr. Arning had returned to Europe he had learned that the disease had made considerable progress, and the unfortunate man was now in a condition of marked marasmus.—*Medical Record.*

SALOL, as a substitute for iodoform, is not only a great relief to the olfactories, but an efficient dressing in all cases in which iodoform is indicated, the price is also in its favor.

PEROXIDE OF HYDROGEN by inhalation in advanced stages of phthisis is growing in favor. It has a controlling influence over hyperpyrexia in some cases, and is worthy of extended trial.

A COMPOUND LIQUORICE POWDER.—Mr. J. H. Fisher, in a paper recently read before the Pharmaceutical Society, said that he had some years ago prepared, at the suggestion of a medical practitioner, a compound liquorice powder which was in some respects an improvement on the pharmacopœial powder; it had a pleasanter taste, tart rather than sweet; it was more easily miscible with water, it was less liable to gripe; it was, however, a somewhat more powerful aperient, and had some diuretic and "refrigerant" properties. The formula is as follows: Senna, 2 parts; liquorice powder, 2 parts; fennel, 1 part; sublimed sulphur, 1 part; cream of tartar, 4 parts; sugar, 2 parts.—*Brit. Med. Jour.*

CHLORAMID, A NEW HYPNOTIC.—Chloramid, manufactured on the suggestion of Dr. von Mering, of Strassburg, is the latest hypnotic, and seems to possess many advantages over other similar preparations, It occurs in colorless crystals; is of a mild, slightly bitter taste, but is neutral; soluble in 9 parts water, and in 1½ parts alcohol. It is chemically affected by the presence of alkalies, but acidulated solutions can be administered. Chloralamid is given in doses of 1 to 4 grammes (the latter the maximum), in powder form or in solution with water or wine; the effect is asserted within half an hour and lasts from seven to nine hours. It has been successfully used by Drs. Hagen and Huffler, of Erlangen, in all varieties of sleeplessness, caused by nervous conditions, neurasthenia, phthisis, heart-failure, and in insomnia. It has also been employed and commendably noticed by the clinics of Strassburg, Greifswald, Giessen and Erlangen.—*Notes on New Remedies.*

ANTIPYRIN IN DIABETES.—Something more than two years have elapsed since D. Gonner called attention in the *Correspondenz-blatt für Schweize Aerzte*, No. 19, 1887, to antipyrin as a remedy for diabetes. Since then it has received numerous trials, especially at the hands of the French school of physicians, including Huchard, Robin, Dujardin-Beaumetz, Germain Sée, Panas and others. If the experience of these observers be received, it must be said of antipyrin that, excepting opium, it is the only drug to which a direct and efficient controlling power over glycosuria can be ascribed. Although the precise position of this remedy in the treatment of diabetes cannot be said to be determined, a number of valuable practical facts may be deduced from the experience of the French physicians as follows: 1. It is the milder forms of the disease in which it has been found most efficient. 2. It is administered either alone or in combination with sodium bicarbonate, the latter being preferred by Robin. Fifteen grains of antipyrin, combined with twice as much of the alkali, are given four times a day, an hour before or after meals, and this is kept up from eight to twelve days. Then the treatment is suspended, in order to avoid albuminuria and other toxic effects which excessive administration of antipyrin may produce. This period of intermission is continued until the sugar again returns or increases, say for a week. While the patient is taking the antipyrin a moderate amount of starchy food, even potatoes and bread, it is said, may be taken, to be discontinued again during the intermission, and thus the craving for these foods is supplied. The antipyrin alone is used in the same manner. In the hands of Panas (*Le Progrès Médical*, April 13, 1889) so small a quantity as 45 grains caused the entire disappearance of sugar in one case, although it immediately returned when the dose was diminished or the administration ceased. A *third* fact generally acknowledged by those who have had experience with antipyrin is, that it is in no sense a cure for diabetes; simply averting, during its use, the miscarriage of an important variety of food, the hydrocarbons, and thus conserving the energies of the patient. *Finally*, antipyrin should be cautiously used in cases of nephritis, on account of its well-known tendency in large doses to produce albuminuria, although its use should not be altogether interdicted on this account. Whenever, however, in non-albuminuric cases, albumin appears in the urine, it should be discontinued, as it should also so soon as it is found to produce no effect upon the sugar. It is of doubtful efficacy, also, where tuberculosis has occurred in the course of the diabetes, and where, although it diminishes the sugar, the specific gravity of the urine, nevertheless, increases; also in cases where the sugar exceeds three or five ounces per quart. It is to be stated, also, that good effects of antipyrin obtain in the polyuria of diabetes insipidus, as originally announced by Huchard in *Revue gén. de Clinique et de Thérapeutique*, No. 7, 1888. How does antipyrin act in influencing the glycosuria of diabetes? Very probably through some influence on the medulla oblongata, as suggested by Huchard, who was led to its use in diabetes mellitus by a consideration of its marked effect on other diseases of bulbar origin, as, for example, Graves's disease, its effect as an anodyne, and its effect also observed of converting a diabetes mellitus into a diabetes insipidus. In a word, it must act similarly to opium, and if it produces its effects without the disadvantages of opium, it must prove a valuable acquisition to our armamentaria against diabetes.—*Medical News.*

DIGESTIVE TABLETS.—*L'Abeille Médicale*, of April 27, 1889, gives the two following "antifermentative" formulas as prescribed by Dr. Dujardin-Beaumetz:

℞.—Salicylate of bismuth.
Magnesia.
Bicarbonate of soda, of each 2½ drachms.
Make into thirty powders or tablets.

℞.—Salicylate of bismuth.
Naphthol.
Magnesia, of each 2½ drachms.
Make into thirty powders or tablets.
Dose, one tablet at breakfast and one at dinner.

They are said to be especially valuable in dilatation of the stomach caused by fermentation.—*Med. and Surg. Reporter.*

POISONING FROM CALLY LILY is recorded in the *Therapeutic Gazette*, June 15. A 3-year old child chewed a stem of calla lily; poisonous symptoms followed—mainly failure of circulation. Recovery after three days.

FIFTY thousand dollars has been voted by the recent Legislature of Texas for the establishment, at Galveston, of a medical branch of the State University, and the city of Galveston gave $25,000 additional.—*Pacific Medical Journal.*

NUTMEG POISONING.—Dr. Sawyer reports in the *New York Medical Journal* a case of poisoning from nutmeg. The symptoms were those of dizziness, ending in a profound sleep. He awoke as from a natural sleep. Dr. S. suggests that this might be made available as a remedy where a relaxed sleep was indicated.

BY will of the late Alonzo Clark, M.D., LL.D., it was placed in the power of the faculty of the New York College of Physicians and Surgeons to bestow a scholarship, with an income of about nine hundred dollars a year, for the purpose of promoting the discovery of new facts in medical science. This has been bestowed for three years from October 1, 1887, upon T. Mitchell Prudden, M.D., of New York City.—*Boston Med. and Surg. Journal.*

THE ADMINISTRATION OF COD-LIVER OIL.—For the purpose of agreeably modifying both the odor as well as the taste of cod-liver oil, Dr. Seig, in the *Revue de Ther. Med. Chur.*, June 1, 1889, recommends that it be given in the following formula:

℞.—Cod-liver oil, f℥ lxx.
Creasote, mzl.
Saccharin, grs. ijss.—M.

The odor of this preparation will resemble that of roast meat.—*Medical News.*

THE CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.—Dr. C. H. Mastin, of Mobile, may be said to be the father of this organization, set a wholesome example in the ground he took, at a recent meeting of the Executive Committee, for declining the nomination to the presidency. He is reported as having said that no member of the Executive Committee ought ever to be elected to the presidency. Thereupon Dr. S. Weir Mitcheil, of Philadelphia, was chosen president, and Dr. William H. Carmalt, of New Haven, secretary. The next meeting is to be held in Washington, in September, 1891,—*New York Medical Journal.*

THERAPEUTIC NOTES OF SOME OF THE NEWER MEDICAMENTS.

CONDURANGO WINE.

Although condurango has not entirely justified the claims made for it in the treatment of cancer, the experiments made with it have demonstrated its utility as a stomachic, and in the form of condurango wine it has grown to be very much in demand, especially in Europe. One fluidounce of the wine represents 60 grains of condurango bark. Dose, one-half to one fluidounce. Parke, Davis & Co. supply the wine and also a fluid and solid extract of this drug, and will also mail, on request, a working bulletin on condurango to physicians who wish more detailed information concerning it.

ARSENITE OF COPPER TABLETS, 1–100 GRAIN.

An article by Dr. J. Aulde on the application of arsenite of copper in bowel affections, and especially in the diarrhœa of typhoid fever, was published in the July, 1889, *Therapeutic Gazette.* The results obtained by this investigation were so favorable to this remedy that Parke, Davis & Co. added to their list of tablets a 1–1000 grain arsenite of copper tablet, which makes a convenient method of preparing the solution commended by Dr. Aulde. One tablet should be dissolved in three, four to six ounces of water, of which the dose is a teaspoonful. Reprints of Dr. Aulde's article furnished physicians by Parke, Davis & Co. on request.

PIL. SALINE CHALYBEATL TONIC (FLINT'S).

In the *New York Medical Journal,* May 18, 1889, Prof. Austin Flint, M.D., speaks very highly of the following formula as a tonic in Bright's disease, and also in simple anæmia, stating that he has given it in nearly every case in private practice in which a chalybeate tonic was indicated for some time past, and in only one case out of 35 did it fail to cause marked improvement. Prof. Flint states, also, that in five cases of Bright's diseases, of which he has notes, this formula was the only medicinal remedy employed. In all cases the tonic seemed to exert an influence on the quantity of albumin in the urine. Dr. Flint's formula is as follows:

℞.—Sodi chloridi (C. P.) ʒ iij.
Potassii chloridi (C. P.) gr. ix.
Potassii sulph. (C. P.) gr. vi.
Potassii carb. gr. iij.
Sodii carb. (C. P.) gr. xxxvj.
Magnes. carb. iiij.
Calc. phos. præcip. ʒ ss.
Calc. carb. gr. iij.
Ferri redacti, gr. xxvij.
Ferri carb. gr. iij.
M.—In capsules, No. 60.
Sig.—Two capsules three times daily, after eating.

In the great majority of the cases of anæmia, etc., in which iron was strongly indicated, the tonic seemed to act much more promptly and favorably than the chalybeates usually employed. In a certain number of cases in which patients stated that "they could not take iron in any form," the tonic produced no unpleasant effects.

This formula is now furnished by Parke, Davis & Co. in pill form, and reprints of Dr. Flint's article from the *New York Medical Journal* will be sent free to doctors indicating their wish for them.

SALIX NIGRA.

This remedy has been used with such success as a sexual sedative in the treatment of masturbation, excessive venery, spermatorrhœa and ovarian disease. As a sexual sedative the fluid extract of the buds is considered the most efficient. Dose, ½ to 1 fluidrachm, not miscible with water. As a general tonic and antiperiodic the fluid extract of the bark is employed with advantage. Parke, Davis & Co. make both these extracts, and will mail to the medical profession, on demand, working bulletin giving botanical description, medicinal activity, use and notes of cases.

PEPSINUM PURUM TABLETS, SUGAR-COATED.

These tablets are readily soluble, are without admixture of foreign substances, and will retain their activity indefinitely. Parke, Davis & Co. have given especial attention to digestive ferments and their pepsin and pancreatin products have been proven of superior activity to all others, both by elaborate comparative tests by eminent chemists and by clinical practice. These tablets furnish a very convenient form for administration of this now popular remedy.

COCAINE TABLETS.

These tablets are now largely used by careful physicians for extemporaneous preparation of any desired strength cocaine of solution. The rapid deterioration of cocaine solutions make these tablets a necessity. To make a 2 per cent. solution of cocaine: In one fluidrachm of water dissolve one cocaine tablet, 1⅛ grain. To make a 4 per cent. solution of cocaine: In one fluidrachm of water dissolve one cocaine tablet, 2¼ grains. To make a 10 per cent. solution of cocaine: In one fluidrachm of water dissolve five cocaine tablets, 1⅛ grain; or dissolve two 2¼ grain and one 1⅛ grain tablets in one fluidrachm of water. Parke, Davis & Co, guarantee the purity and anæsthetic efficiency of their cocaine product, and will send samples of their cocaine tablets to physicians, if desired.

INSTANTANEOUS CURE OF WHOOPING-COUGH.

In the *Archives of Pharmacy*, 1889, page 382, it is stated that the instantaneous cure of whooping cough was attained by Dr. M. Mohn, as a result of accidentally observing that the disinfection of the sick-room of the whooping-cough patient by sulphurous acid caused the disappearance of the paroxysms with a rapidity bordering on the marvelous. The patients are freshly clad in the morning, and placed in another room, in which they remain during the day. Meanwhile, 25 gm. of sulphur is burned in the sick-room to each cm. of space; and after the bed-clothing, garments, etc., have been properly spread out, and the sulphurous acid been permitted to permeate the air for five hours, the patients return to their disinfected sleeping-rooms in the evening, and are cured of whooping-cough.

Physicians may not generally be aware of the fact that sulphur bricks are obtainable, which may be burned to secure the effects of sulphurous acid by inhalation, or for general disinfectant purposes. Parke, Davis & Co. supply these, as well as a general line of disinfectants for household use, and will afford physicians all desired information concerning them on request.

SYRUP TRIFOLIUM CO.—A DESIRABLE ALTERATIVE FORMULA, A SUBSTITUTE FOR SYRUP SARSAPARILLA.

The London *Hospital Gazette*, August 3d, 1889, calls the attention of physicians to an alterative formula in the following words:

The pharmacopœia is singularly poor in vegetable alteratives, and sarsaparilla the best known and most frequently prescribed, is most uncertain in action, and frequently very disappointing in results. Any well tested addition, therefore, to our materia medica in this class of remedies, will, we are sure, be gladly welcomed by practitioners. Some time ago we received from Messrs. Parke, Davis & Co. of Detroit, U. S. A., a sample of syrupy compound containing the essential elements of trifolium pratense (red clover), stillingia sylvatica (yaw root), lappa officinalis (burdock), phytolacca decandra (poke-root), berberis aquifolium (mountain grape), cascara amarga (Honduras bark), and xanthoxylum Americanum (prickly ash). All these are powerful alteratives, and have been in common use by American physicians in cases of a scrofulous or syphilitic nature. The proportions of each drug contained in the syrup are given with the directions, and to increase its operative action 8 grs. of iodide of potassium have been added to each ounce. We have used it with decidedly satisfactory results in some cases of chronic skin diseases of suspected specific origin. Being very palatable, children take it readily, and we have found it exceedingly useful, when combined with small doses of perchloride of mercury, in treating congenital syphilis.

SEMINAL FLUID.—A true human seed, the seminal fluid is, in fact, the richest and most complicated of all the products of secretion. It is formed throughout the vast net-work of the seminal tubes, the extent of which can hardly be determined by the eye of the anatomist, and through the agency of a large amount of arterial blood. Once formed, this liquid presents a unique spectacle of living fluid, in which, to borrow the expression of Charles Bonnet, the Supreme Architect of the universe has sown living corpuscles, just as He has sown planets and comets in the vast expanse of the heavens. *Syallanzani.* From Dr. Louis de Siré in Wood's Monographs.

BOOKS AND PAMPHLETS RECEIVED.

Circular LX. of the Board of Health of the State of New Jersey as to Laws Relating to Public Health.

Circular for 1889–'90 of the Medical College of the State of South Carolina. Sixty-first Announcement.

On Unusual Methods of Acquiring Syphilis; with Reports of Cases, by L. Duncan Bulkley, A.M., M.D., of New York.

The Rational Method of Preventing Yellow Fever on the South Atlantic Coast, by J. C. Le Hardy, M.D., Savannah, Ga.

The Therapeutic Value of Electricity in Gynecology. A Lecture delivered by invitation, at the New York Polyclinic, May 21, 1889, by Augustin H. Goelet, M.D., of New York.

Report of a Case of Stricture of the Rectum, the probable result of a Specific Vaginitis, by Lewis H. Adler, Jr., M.D., late Resident Physician University Hospital, Philadelphia, Pa.

Sewage Disposal. An Address delivered before the State Sanitary Convention at Emporia, Kansas. December, 1888, by W. L. Schenck, M.D., member of the Kansas State Board of Health.

De La Lobelline dans la Thèrapeutique de L'Asthme. Memoire Présenté. An 1 er Congrés Brésilien de Médicine et Chirurgie, et Lu, Devant le Mêne Congrés, á la Sénace au, 15 Septembre, 1888. Par le Dr. Silva Nunes, Rio de Janeiro.

PALMA-CHRISTI, the veritable castor oil plant, was the one which miraculously sheltered Jonah, and not a *gourd*, as translated in King James' version.

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THOMAS F. WOOD, M. D., }
GEO. GILLETT THOMAS, M. D., } Editors.

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ORIGINAL COMMUNICATIONS.

PERITYPHLITIC ABSCESS, LACKING THE USUAL SYMPTOMS—CURE EFFECTED BY DRAINAGE THROUGH THE PERINEUM.

By W. J. H. Bellamy, M.D., Wilmington, N. C.

K., æt 62, of fine build and strong constitution, for years a faithful employeë of the W. & W. R. R., with a good personal and family history, was taken with chill and fever, apparently of the quotidian (intermittent) type, before about 2 a. m. July 14, 1889. Ordinary symptoms and ordinary treatment—purgatives, antiperiodics, antipyretics. No special indications of any other trouble, no abdominal pains, no obstinate nausea, no vomiting, no impatience of manner were exhibited. In the temporary absence of the undersigned, during the week ending July 28th, 1889, and about ten days from the commencement of the attack, Dr. Thomas F. Wood gave him the necessary attention, and reported the case as a double quotidian intermittent, and had prescribed quinine and antipyretics and simple aperient pills. The temperature record during the second week was of no value in diagnosis because of the influence exerted by antipyretic treatment, which for several days was kept up quite constantly. When, however, during a temporary suspension of treatment, as above, about the eighteenth day after the attack, the patient casually remarked that there was a feeling of discomfort in the region of the perineum, which he had experienced for several days. An examination, though carefully made, revealed no trouble in that region other than a slight tumefaction and the subjective symptoms of a little dysuria, which the patient was inclined to attribute to the probability of the existence of a trouble which might have had its origin in several attacks of gonorrhœa when a much younger man. The next day following my attention was directed to the prevesical region, where, though the patient was naturally quite corpulent, with strong tendency to obesity, there appeared to be an area of tumefaction extending to the right and in the direction of the ileo-cœcal region, flannels, soaked in hot hop tea, were applied, and on the following day I diagnosed clearly the existence of an abscess, and decided to operate, and so informed the patient. His suffering at this time did not appear to be very great, and at no time did he even think it was necessary for me to give him opium in any form. I requested Dr. W. to be present, and told him my diagnosis and intentions. This being confirmed and approved, I made a good incision into this dome shaped mass in the prevesical region and evacuated a pint or more of pus, stinking and of a brownish-yellow color. After the escape of the major portion of the pus, quite a large piece of necrotic omentum presented itself in the wound, and at the same time a spiriting artery, omentum and artery both secured by catgut, and the pus cavity well washed out with a 20 per cent. solution of carbolic acid. This was done on the morning of August 5th, and a drainage was secured in the wound. While irrigating the cavity with the carbolized solution, it was noticed that the patient had pain nowhere but in the perineal region, when the cavity was distended with some force, and I observed that by pressing upon this region force was applied to the contents of the abdomen, impulse was given which ejected the water through the abdominal incision. It was clearly evident, then, that the pus had made its way into the most dependent pouch of the peritoneum, and that, through drainage, would be essential to the best results. It was discovered, upon an attempt being made to introduce a catheter as a guide in making the perineal incision, that the patient had a stricture of a smaller caliber than any catheter at hand, and a completion of the drainage would have to be effected at another visit. Accordingly, the abdomen being distended, I made an incision a little to the right of the raphé, and to the depth of some 1½ inches, and reached the pus cavity from below by means of a small trochar. A drainage-tube was inserted therein, the nozzle of an ordinary Mattson syringe introduced into the prevesical wound and the cavity well washed out, the liquid and pus flowing very freely through the drainage-tube in the perineum. Then an antiseptic gauze of iodoform, eucalyptol and bichloride was laid over the wound above and a saucer was put under the tube in the perineum.

For three or four days the ligatured omentum protruded further and further each day, and was each day tied further down with catgut and the upper portion cut off with scissors. In all, a piece of diseased (black) omentum, as large as a hand, escaped from the wound. At 9 : 30 a. m. and 9 : 30 p. m., systematically for twelve days, this treatment was kept up; at the expiration of this time, the drainage tube having slipped out through the night, and all traces of pus having disappeared, no attempt was made to replace it, and the perineal wound healed rapidly. For a few days longer a weak solution of carbolic acid was thrown in through the upper wound, but it healed rapidly. The patient now in good condition, general directions to a convalescent were given and the case discharged. He is now well and on a visit to a relation in the North.

That there was general peritonitis, was indicated by the large masses of necrotic omentum and the melted flakes which escaped from the lower wound, and the facility with which the water pumped in with some force through the abdomen, escaped *per saltem* through the perineal opening. The constitutional disturbance as indicated by high fever, masked by antipyretics, but still of a severe grade, ordinarily would not warrant a diagnosis of perityphlitis, and it was only when the pone-shaped mass on the right iliac region extended over past the linea alba that it became apparent that there was a large pus cavity somewhere, and that the most likely origin was in perityphlitis.

Before the perineal puncture was made in the afternoon the temperature was 102.5° F., and in the half hour it took to wash the cavity freely it dropped nearly a degree, and at 9 o'clock, four hours from the completion of the drainage, the temperature reached the norm and remained steadily there until convalescence was established firmly.

It has always been a desideratum of surgeons to secure this thorough drainage, it being, if we understand him correctly, the ideal drainage of Dr. Hunter McGuire in gun shot wounds of the abdomen. The problem always to be solved was, how to secure a guide to the incision in the perineum. In this case, of course, I took the guide which nature had given me, and found it surgery made easy.

In reviewing the case the chief points of interest are, the absence of pain in the abdomen and the absence of almost invariable subjective symptoms, such as nausea, etc.; hence the absence for a long time of many diagnostic objective symptoms and the manner in which the abscess showed it.

Did the analgesic property of the antipyrin in this case mask the symptoms? This was not given until ten days after the incipiency of the trouble, which we *now* know were chills and fever from purulent inflammation; and the antipyrin treatment was kept up for only five days. There were sweats after each exacerbation (a common and a characteristic occurrence after malarial intermittents) of fever; this, too, was before diaphoretics or antipyrin were used. The patient's avocation calling him, at all hours and very often under adverse circumstances, to creeks and rivers and other wet places, where water-tanks for the W. & W. R. R. were situated, the symptoms seemed to justify both of his advisers for some time in expressing the opinion that the trouble was an intermittent from a malarial cause.

Did the necrosis of the peritoneum change the character of the symptoms? We have all known the character of the pain in peritonitis, and there must have been an inflammation of this envelope preceding its destruction. In an inflammation causing so much destruction and damage, there should have been graver symptoms, and they were invariably absent when the daily visits to the patient were made,

TREATMENT OF DYSENTERY.

By J. O. Walker, M.D., Randleman, N. C.

I do not claim for this originality, but I am desirous of giving to the profession my experience with certain drugs in the treatment of this disease and the result.

From the 1st of May to the 15th of August, 1889, I have treated 93 cases. In 18 cases I carried out the usual line of treatment, viz: opium by mouth and per rectum, acetate lead and the other familiar astringents. Out of this number 2 died; the remaining 15 cases were confined to their rooms from one to three weeks. It is reasonable to suppose that I was not satisfied with the result of this treatment, consequently I got together all the literature I could on the subject, and from the innumerable number of remedies recommended for the cure of the disease I selected the following: If called before the process of disintegration begins, I have found sulphate magnesia combined with dilute sulphuric acid an excellent prescription; it empties the bowels of all irritating matter, relieves congestion, and afterwards acts as an astringent.

If the disease continue after the action of the above, instruct the nurse, if she possesses ordinary intelligence, how to use the hypodermic syringe, and have her inject in patient's arm, if he is an adult, $\frac{1}{8}$ gr. sulph. morphine and 1–200 gr. sulph. atropine every four or five hours, if bowels move too often, or if suffering much pain.

The administration of these agents by this method have several advantages over administering the same remedies *per orem.* They enter the circulation much quicker, they check peristaltic action much more effectually than opium by the mouth. Of course some remedy should be given to act upon the diseased mucous membrane, and I have found nothing better than the sulphocarbolate of zinc; it is a splendid antiseptic and an astringent of much value. If patient suffers much from tenesmus, I introduce into the rectum a soft rubber tube, and by means of a fountain syringe inject into bowel one quart of very warm water, to which some antiseptic has been added, such as salicylate of soda, 10 grs. to O. I have this done every three or four hours, if necessary. This rarely fails to give complete relief. If abdomen becomes very sore and tympanitic, I have turpentine liniment applied on flannel to abdomen as often as necessary. To counteract depression, give milk punch, French brandy, egg-nog. Good nourishment is very essential, as the disease makes a serious drain upon patient's vitality; such articles of food as peptonized milk and the juice of meat are excellent.

I have followed the above line of treatment in 76 cases, and am gratified at the result. Nearly all of these cases were of more than ordinary severity, and all recovered without any difficulty.

No doubt a great many of the profession have seen something in the text-books in regard to using morphine and atropine in the treatment of this disease, but I venture the assertion that not many of you have given them a fair and impartial trial, from the fact that you were afraid to leave your hydodermic syringe with the nurse.

If this imperfect article induces some one to adopt this method of introducing opium into the system for the purpose of counteracting this trouble, I shall be more than repaid for the time I have spent in writing this article.

SALICYLIC ACID IN TYPHOID FEVER.—Dr. Schakovski (*Thera. Monatsh.*) claims great success from the use of salicylic acid in malignant scarlatina. He used it in 125 cases. The mortality is but 3½ per cent. The following formula is used: ℞. Acidi salicylici, 1 part; aquæ destillatæ, 75 parts; syr. aurantii cort. 30 parts. M. Sig. Give a teaspoonful every hour during the day and every two hours during the night. The temperature falls very rapidly after taking this mixture, so that in certain cases, inside of 48 hours, the temperature has fallen from 105.8 F. to 100.4° F. All trace of fever vanishes by the tenth day. Nevertheless, the author advises the continuance of the remedy for some time, in decreasing doses, to prevent a relapse. All serious complications, such as uræmia, anasarca and diphtheria, are avoided through this treatment. The treatment is ineffectual only when employed too late (after the fourth day of the illness), or where grave complications already exist.—*Medical Standard.*

REPORT OF THE CHAIRMAN OF THE SECTION ON GYNÆCOLOGY.

By Dr. THOS. S. BURBANK, Wilmington, N. C.

(Read before the Medical Society of the State of North Carolina, at Elizabeth City, April 16, 1889.)

Mr. President and Gentlemen of the Medical Society of the State of North Carolina:

A review of the literature of gynæcology for the past year shows no marked progress, though the field is full of investigators, and the subject one of ever increasing interest. The labors of such men as Simpson, Sims, Martin, Tait, and a host of others in the study of the pathology and treatment of uterine disease, coupled with the discoveries of Koch and Lister, have so thoroughly covered the ground that investigators at present have to look to the highways and hedges for soil to develop fine-spun theories, bungling and oftentimes dangerous procedures. The mistake so often made of rushing into print with every idea and stray syllogism that strikes us, is to be deplored; the more lamentable from the fact that we, the younger members of the profession, are the guilty parties, thereby throwing away the spring-time of our career in the vain hope that a few short strokes of the pen will lift us to the pedestal on which stands the immortal Sims. "The days of miracles are passed." He who would be true to his profession and himself, must go slow, "must tread the paths our fathers trod," so that, "leaving his footprints in the sand of time," they may serve as guide to some wayfarer in generations to come.

The marvelous electricity is now offered us to revolutionize gynæcology. The many ills peculiar to women melt before this mighty power as "mist before the morning sun." Fibroids are to be dreaded no longer. The various erosions, engorgements, inflammations, etc., of the uterus and its appendages are removed by a force so subtle that a knowledge of their existence is a pleasure inestimable.

That electricity has some claim on the attention of the gynæcologist, yea, a great claim, is a fact incontrovertible; but that it will take the place of all other methods of treatment in diseases of women, as claimed by Apostoli and his followers, the records of past years fail to prove. It is certainly the best cautery known;

(1) On account of its easy management. (2) Unlike chemicals, there is no resulting inflammatory action. The action of the induced current on relaxed muscular fibre is well-known and deserves attention in the treatment of displacements, subinvolution, etc. If the statement of Legros and Quimus, that a descending galvanic current dilates blood-vessels and an ascending galvanic current contracts blood-vessels, be true, then galvanism will be a potent factor in the treatment of amenorrhœa, metrorrhagia and allied conditions. Apostoli admits that the good effects of the galvanic current are due to its cauterizing action, when he says: "The galvanic current is principally used as a caustic for removing diseased mucous membrane, coagulating blood, or destroying foreign growths in body of uterus or diminishing hypertrophy of uterus itself." And again: "When the fibroid is not safely accessible from the vagina, the intrauterine application of the positive current by means of the platinum sound suffices, but a much weaker dose is given and the applications must be numerous." Again: "In cases of chronic cellulitis and perimetritis, he punctures them with the negative electrode, and in a few days the diseased tissue either comes away in sloughs or is reabsorbed."

In the treatment of fibroids, according to the theory of Apostoli, "the diminution should not be effected by the actual destruction of tissue, but by a movement of absorption determined by the passage of the current or the application of the negative pole." He attributes the absorbent virtue to the negative pole. He claims, in the treatment of fibroids, relief of pain, hemorrhage and retardation of growth, for his method, simplicity, harmless, painless, effective, apart from malignant disease, he knows of hardly any disease or displacement of the uterus which cannot be either relieved or cured.

Dr. Gehrung, of St. Louis, Mo., a disciple of Apostoli's, noticed, in his cases of electrolytic puncture for the removal of fibroid tumors, two different processes toward their resolution: (1) Gradual atrophy, caused by a disarrangement and subsequent absorption of the constituent elements of the neoplasm. (2) Cystic degeneration of fibroids caused by electrolytic puncture. "Around the tip of an electro-negative pole introduced into a uterine fibroid an accumulation of fluids and gases take place, the product of electrolysis. Some of these mixed particles escape along the electrode, while some remain imprisoned on its withdrawal. These retained particles are usually absorbed, and may possibly represent an active principle in the process of atrophy of the fibroid. This cyst of electro-chemical detritus grows by gradual increase of its contents and consequent thinning of its walls. Thus a fibroid may be transformed into a cysto-fibroid, and finally into an abscess." This condition would require an operation of puncture and drainage—an undesirable complication.

From the treatment of a case of submucous, intra mural fibroid by the constant current, Dr. Mary Putnam Jacobi concludes that this new treatment acts by facilitating the normal influence of menstruation in inducing involution and by cauterization.

In the discussion on electrolysis in the treatment of uterine diseases at the meeting of the Obstetrical Society of London, June 6th, 1888, Dr. J. Shaw concludes that the constant current acts on a fibroid in a three-fold manner: (1) To but a small degree by electrolytic action, the positive pole most affecting the cellular, and the negative the formed elements. (2) By the hemostatic action of the positive pole and the derivative influence of the negative. (3) By increased arterial tension, and so diminished nutrition accompanied by some alteration of the mutual relation of the fluid and solid elements. Other members present assigned no specific virtues to electricity, but that it acted as a stimulant, caustic and cautery.

THE TREATMENT OF DYSMENORRHŒA AND STERILITY CAUSED BY FLEXION OR STENOSIS OF CERVICAL CANAL.

Simpson was the first to call attention to the feasibility of the treatment of these conditions by incision or dilatation with sponge and laminaria tents. The latter, I believe, has been entirely abandoned. Though the operation of incision is often successful in the treatment of obstructive dysmenorrhœa and stenosis, it is so fraught with danger that conservative surgery demands a more gentle means to relieve these troublesome afflictions. The chief objections urged against this method is the liability to excite inflammation, the subsequent formation of cicatricial tissue in neck of uterus and return of trouble. Discision, another method of incision, consists in division of internal fibres of cervix in several directions, is milder, but subject to same objections as incision. Divulsion, the forcible stretching and tearing of cervical tissue, is alike open to objections of former operations, more dangerous from the fact that we have left a greater absorbing surface and sepsis is more likely to follow.

Rapid Dilatation.—Much has been said and written of late about this operation. Its advocates claim for it expediency, absence of danger, efficiency. They claim a distinction between this operation and divulsion; the distinction is one of degree, not of kind. The cervical canal is forcibly and rapidly dilated, with an instrument that admits of a separation of its blades to about one and a quarter inches, and is carried to full capacity of dilator; this leaves an opening that will freely admit the index-finger. The size of a normal external or internal os, as we learn from a number of dissections by Dr. C. Henri Leonard, is that of a number eleven sound French scale. To rapidly and forcibly dilate an opening of this dimension to the capacity of the index-finger in tissue as resisting as uterine certainly produces rupture, and rupture is divulsion. That septic troubles follow, I can vouch for, for in more than one instance the accident has happened to me, though every precaution was used to render patients, operator and instruments thoroughly aseptic, and in no case was there evidence of an old or existing inflammation. There is no necessity for so enlarging the calibre of the canal except for conditions requiring an exploration of uterine cavity. All we want is a canal sufficiently large to allow menstruation unobstructed and the free ingress of the spermatozoa. If a small opening answers, why enlarge it? If the end can be accomplished without mutilation, why disfigure? The nearer we imitate nature, the nearer we arrive at perfection and the less risk we run of adding unpleasant memories to our past. Uterine tissue admits of a vast amount of stretching without laceration, if done slowly and cautiously; so, by far the most rational, safest and most effective method in the treatment of these conditions is gradual dilatation. It is not so quick, and may not serve so good a purpose to the specialists in the large cities who are so crowded with patients that time is of more importance than an occasional failure; but to country practitioners the failure in one case may sound the death-knell of their gynæcological practice, it is a desideratum of wonderful preparations. The operation of gradual dilatation is accomplished by the passage of sounds gradually increased in size until the diameter of canal is sufficient to admit intra-uterine stem or the desired amount of dilatation is produced and maintained. Place patient in left lateral prone position, introduce Sims' duck-bill perineal retractor and expose cervix, seize anterior lip of cervix with vulsellum or strong tenaculum, and draw os as near vulval orifice as possible; first introduce probe small enough to pass external os without using force, and study direction and physical condition of canal, withdraw and gently pass sound sufficiently large to dilate slightly, repeat two or three times, increasing size of instrument each time; dry canal thoroughly and paint with Churchill's tincture iodine, put in vaginal tampon of absorbent cotton moistened with glycerine or extract pinus canadensis, patient to be put to bed and kept quiet. After twenty-four hours tampon removed and douche of hot water given. The second day another operation is done, and so on. Owing to the resiliency of uterine tissue the cervix has recontracted, and we find the diameter somewhat lessened than when left, though not so small as at beginning of treatment, consequently we begin with instrument one size smaller than one last used, and increase as before, repeating operations, until we can introduce stem to maintain dilatation or overcome contraction. The principle is the same employed in the treatment of stricture of the urethra, and acts by overcoming contraction of circular muscular fibres and producing absorption of exudates. Emmet recognizes no obstructive form of dysmenorrhœa, and says injections of hot water, in knee-chest position, will accomplish everything claimed for dilatation. However true this may be, there are cases of dysmenorrhœa with a stenosis or flexion that dilatation of cervical canal, maintained, relieve.

Admitting that each and all the methods are often effectual, I claim that incision and discision mutilate, disfigure and are dangerous; divulsion is more dangerous, cicatricial tissue results and the former condition returns more often, rapid dilatation with the use of the intra-uterine stem is not devoid of danger and has no advantage over gradual dilatation, with or without the stem, which is simple, harmless, painless and effective.

Mrs. F., æt 37 years; married; multipara; nativity U. S.; occupation, operative in cotton factory; family good.

History.—Health through childhood very good; menstruated at 14; menstruation regular and painless; married at 21 years, became pregnant, went to full time, and was delivered after a hard and rapid labor. Her getting up was slow, convalescence long and tedious; suffered dragging pains in pelvis, when erect, severe backache, constipation, frequent headache, profuse leucorrhœa, capricious appetite, hysterical convulsions; became a widow, and on account of bad health was unable to work for the support of child and self, sought relief from physician, who discovered lacerated perineum and cervix, retroverted and prolapsed uterus. She was operated on for these with complete success, Smith's pessary fitted, found relief entire, resumed work, wore pessary two years, had no inconvenience without it, so discarded its use. Married again, became pregnant, result of labor return of old troubles in an aggravated form. Tried pessary with no relief, had physicians to fit pessaries, unable to wear one. After suffering two years applied to me for relief. I found patient anæmic, nervous, having frequent attacks of hysterical convulsions, menstruation irregular, leucorrhœa profuse, bearing-down pains in abdomen, severe headaches and backache, constipation, frequent micturition, lacerated perineum and cervix, bilateral depth of uterus four and one-half inches. Put her on tonic treatment, and after three weeks operated for laceration of cervix with uterus outside of vulva; uterus returned and held in place by glycerine tampon, patient put to bed and kept in recumbent position, tampon changed once in forty-eight hours, on eighth day stitches removed, union complete, depth of uterus normal, operated for perineal rupture, allowed uterus to remain fourteen days, and found good union; kept patient in bed three weeks, fitted pessary and allowed her to get up. Uterus prolapsed as before, tried various instruments, could find none to retain organ in place, had other physicians to fit pessaries, result same. All her former symptoms returned under the most vigorous tonic and mechanical treatment, including Emmet's hot water treatment. Called on Dr. Geo. G. Thomas for consultation, and at his suggestion decided on a Tait operation for relief of the procidentia and consequent ills. Preparation of patient consisted in laxatives and warm baths followed by friction to skin for three days prior to operation. Operation done with strict antiseptic precautions on the afternoon of July 30th, 1888.

Patient made an uninterrupted recovery, with the exception of a slight malarial complication. Relief entire, has been, and is now, hale and hearty and able to stand on her feet and work ten hours a day.

REPORT OF CHAIRMAN OF SECTION ON MICROSCOPY.

By James A. Hodges, M.D., Fayetteville, N. C.

(Read before the Medical Society of the State of North Carolina, at Elizabeth City, April 16, 1889.)

Microscopical research within the past year has not been rewarded by any especially great discoveries. More attention seems to have been devoted to the technique of the science, and there has consequently been greater perfection attained. This is particularly noticeable in the preparation and manipulation of histological and pathological specimens.

Notable among the improvements presented to the profession has been the introduction of Instantaneous Photomicography. This microscopical aid has been especially developed and perfected during this year, and some of the results are entirely new and susceptible of numerous and important applications in the study of the Infusoria and of all living micro-organisms.

Crapanica, an Italian microscopist, arrives at the following conclusions as the results of his experiments with the photographic microscope:

"1. Rapid photography, 1-20 of a second, or very rapid, 1-200 of a second, can be obtained if very high powers and inversion lenses be used.

"2. By means of a special shutter and a particular arrangement, any number of successive negatives of the movements of an object can be obtained, just as, macroscopically, the flight of birds, and the rapid movements of other animals, have been.

"3. By the method of successive positions the different planes of any preparation can be reproduced upon the same sheet, thus obtaining a photograph unique in its entirety."

In the method of examining blood corpuscles, Professor Masso has found that osmic acid, used in a 1 per cent. solution, preserves them better than any other known reagent, and does not precipitate the albumen like the mercurial solutions formerly used. It is said to fix the leucocytes in their natural condition, and, though they become granular, they remain transparent and preserve their proper and characteristic outlines.

Dr. Henry Formad, of Philadelphia, has given especial attention to the methods of examining blood stains and measuring the blood corpuscles.

The question has long been one of controversy as to whether the microscope can be depended upon to determine positively or not that a given specimen of blood is that of a human being. Dr. Formad contends that, while the spectroscope and chemical reagents are of utility, that, for the recognition of human blood, the microscope alone is of any value, and that the sole method yet found available with this instrument is that of measurement of the corpuscular elements.

He maintains that fresh human blood cannot be mistaken, under the microscope, for the blood of any animal whose corpuscles have a mean diameter of less than 1-4000 or even 1-3600 of an inch. With regard to dried blood, it is claimed that this can be recognized just as readily, provided it has dried quickly; however, if it has dried slowly, it undergoes decomposition and its morphology cannot be made out as definitely. By his improved methods, Dr. Formad claims that he can measure 9-10 of the corpuscles reproduced, and believes that he can more accurately diagnose human blood than has ever been done before.

The following easy method for preserving and staining tubercular sputa has recently been recommended by a German microscopist: Prepare, in a small wide-mouthed bottle, an aniline fuchshine solution, with carbolic acid (aniline water, 8 parts, fuchshine, 4 parts, carbolic acid, 1 part), and allow the patient to expectorate into the bottle. This preparation not only preserves the sputum, but also stains the bacilli, so that, after twenty-four hours or longer, it may be spread on cover-glasses and mounted in the usual manner. The special utility of this method in cases where the patient is at a distance, will be evident, as the sputum is stained while fresh, and decomposition does not have an opportunity to occur.

In near relation to this subject, it may not be amiss to state that Spillman and Haushalter have recently reported to the Paris Academy of Sciences that they have demonstrated, positively, by their microscopical investigations, that house-flies may be, and often are, carriers of tuberculosis contagion. Their investigations included repeated examinations made of the excrements and intestines of flies that had fed on the spit-cups of consumptives, and in both they found abundance of bacilli. They found, also, the same bacilli in dried excrement which was scraped from the windows and walls of rooms occupied by phthisical patients. When the fly dies its body desicates and sets free the bacilli, which are still capable of growth. The idea, however, that this insect may carry contagion is not a new one, for the contagious ophthalmia of Egypt is believed to have been largely disseminated through this agency, while bacteriologists have noticed how readily cultures may become infected by them, and Koch, it is said, admits that they may be the vehicles for the distribution of cholera.

As a practical deduction from these investigations, it is well for practitioners to insist upon a thorough and systematic disinfection of the expectorations of patients suffering from phthisis.

Probably the most novel of all the new therapeutic agents suggested for the treatment of this disease (pulmonary phthisis) is the inhalation of micro-organisms, the benefit of which treatment, Dr. Ege, of Reading, Pa., says, can be demonstrated with the microscope. This, he says, is a modification of Cantani's treatment, and is used in the following manner: To the white of one egg, six to eight ounces of water are added, and this albuminous mixture is allowed to stand in a lightly covered vessel from six to eight days so as to give it a disagreeable, penetrating odor and to allow the development of bacterium termo, It is then strained, and from a half to one ounce is used by means of a common atonizer three times a day. If the mixture gets too odorous, which it is apt to do in about two weeks, a second culture has to be prepared.

As a result of this treatment, the sputum is said to become much thinner in from two to five days, the quantity greater and the bacillis much increased in numbers. In some of the cases it was six months before the microscope showed a marked decrease in the number of bacilli. Dr. Ege reports having used this method in 29 cases, and of this number, six are said to have been entirely cured, two having died, and the remainder are all reported as improving at the present time.

It is needless to speculate upon the *modus operandi* of this novel line of treatment. The microbes in the inhalation are not possessed of a pathological power, and cannot live in the tissues of the living human or animal subject. It is said that they do not kill the bacilli tuberculosis, but drive them out: whether this be due to the irritation of the lung or the penetrating odor of hydrogen sulphide, or other causes, is not specified. Perhaps the enthusiasts of the sulphuretted hydrogen treatment may be encouraged and "take heart again."

This new discovery, if it does not establish a fact, at least proves that the American microscopist is rapidly advancing in the science. Ten years ago there were many obstacles to overcome, and a thorough education in practical microscopy could not be obtained in the United States. These conditions are now rapidly changing, and to-day four large laboratories are thoroughly equipped and prepared for carrying on advanced experimental research. Heretofore microscopical study has dealt almost exclusively with the results of disease, while now it searches for the cause.

During the long ages past, while diseases were completely enshrouded in mystery, or were regarded as produced by some supernatural cause, every effort to combat them was unavailing, and all forms of disease, especially devastating epidemics, prevailed. Now, that the nature of most diseases has been revealed and many of their causes brought to light, true preventive measures have followed.

And we are proud that among the many distinguished men who have devoted their time and energies to this ennobling work for humanity, and have thereby so radically advanced the science of medicine, our own country has shown a few capable of the highest scientific achievements; note, for example, the experiments of Prudden, Formad, Wood, Sternberg and others, who by means of the microscope have solved many puzzling problems and ascertained the cause of many communicable diseases.

Pathogenic microbes have been determined for about fifteen diseases, and it is now known that from many of these diseases protection is undoubtedly secured by attenuated virus. This has been successfully accomplished in the case of small-pox, anthrax, swine-plague and pleuro-pneumonia, and the evidence in favor of Pasteur's inoculation for the prevention of hydrophobia, says Sternberg, "is such that it has a relative value," and with the recently improved methods better results are anticipated in the near future.

Within the past year nothing has engaged public attention, possibly, so much as the yellow fever epidemic in the South, or the ravages of that fearful scourge at present in the city of Rio Janeiro.

During the year several investigators have been diligently searching for the pathogenic microbes of the disease.

Dr. Paul Gibier, who was appointed by the French Government to go to Cuba to investigate the whole question of yellow fever, claims to have discovered in the black matter always found in the intestines after death, a bacillus resembling in many points the so-called comma bacillus of cholera. In this opinion he has the endorsement of Dr. Friere, who has long been interested in this subject. The cultures of this bacillus, says Dr. Gibier, "are destroyed by 60° C.," and he believes that this is the reason why inland districts are exempt from the scourge, the comparative dryness of the air destroying the virus. He furthermore believes that this fever is due to the development of the microbe in the intestine the affection being, therefore, a purely local one.

A year ago Dr. George Sternberg, in an address before the College of Physicians and Surgeons, in Philadelphia, on yellow fever, in relation to its supposed bacterial origin, said that his investigations at that time did not confirm the claims of these microscopists in regard to a specific germ. Since then, however, he went to Havana to continue his experimental investigations, and, if we can judge from his subsequent articles, he is still "Hunting for the Yellow Fever Bacillus."

The view that malarial fever was due to the presence of micro-organisms was suggested by Lucretius, 95 B. C., and was advocated in this country by Dr. Mitchell in 1859. In 1879 Klebs announced the discovery of the specific germ as bacillus malariæ, but it was soon demonstrated that this discovery could not stand the tests applied.

A few years later, Laveran discovered the parasite, oscillaria malariæ, which is now known as "the malarial germ of Laveran." These organisms, he claims, belong to the class of infusoria, and are not bacteria, as was once supposed.

Recent experiments have wholly confirmed this fact, and hypodermatic injections of the parasites into rabbits have produced malarial fevers resembling those that affect human beings, thus proving the existence of a specific germ.

Laveran finds additional evidence, also, in favor of his view of the rôle of the parasite in the operation of quinine. Under the action of this drug the parasites were found to disappear very quickly from the blood.

A bacillus for typhoid fever has been established by Dr. Billings, of Chicago. This bacillus is always present in this fever, and is found in no other. It is also demonstrable by the microscope in the tissues and stools of typhoid patients as a characteristic bacillus, but the final factor, necessary to prove its etiological relation to the fever is wanting, that is, the successful inoculation of man or the lower animals with the pure culture of the bacillus. Until this final factor is supplied we cannot be absolutely certain that this bacillus is the cause of typhoid fever. Like the bacillus tuberculosis, it is of diagnostic value and a sure positive sign, but there the utility of this discovery ceases.

Thus it may be seen, even from the researches which have been chronicled in this paper, despite the wholesale condemnation of the germ theory by some who, either from prejudice or indolence, have not informed themselves, that advances are being made in the science of microscopy which, in the end, will benefit the whole civilized world.

No fanatic among microscopists has ever ventured to assert that all diseases are caused by bacteria, but still, as the investigations go on and more is learned of diseases and their effects, more and more of that long list of maladies which afflict the human race are found to be parasites in their origin. All communicable diseases must be put down in this class, beside many that are passed from individual to individual in the ordinary course of life. Thanks to the microscope and that small band of distinguished scientists who employ it, many of the causes of these communicable diseases have been ascertained, and from the fruit of their labors we are patiently, but certainly, gaining information which shall guide us in our struggle for existence against foes that in the past have been hidden enemies to health as well as even life itself, but are now no longer invisible nor unknown.

REPORT OF DR. H. P. MURRAY ON THE PRACTICE OF MEDICINE.

(Read before the Medieal Society of the State of North Carolina, at Elizabeth City, April 16, 1889.)

Mr. President and Gentlemen of the Medical Society of the State of North Carolina:

In offering our report of the progress of medicine for the year 1888, the Section has been subdivided into five parts, as follows:

Specific febrile diseases.
Diseases of the nervous system.
" " digestive organs.
" " vascular "
" " respiratory "

One of these divisions has been assigned to each of the gentlemen whose aid has been sought in the work.

We hope to bring out under each head some discussion that will result in benefit to ourselves and the Society.

Without further preface, your attention is invited for a short time to the consideration of the Specific Febrile Diseases. And out of their number I will select but one to engage our attention at present, for I conceive that the object of these reports is not to present to the Society a thorough digest of the literature that has appeared during the year, but simply to point out for discussion, under each head, one or more of the most important advances that have appeared since our last meeting. For that I will name

THE ANTISEPTIC TREATMENT OF TYPHOID FEVER.

Leroux gives to all cases a good dose of calomel, and then, if there be diarrhœa, he gives naphthol and bismuth, each 4 grs. every hour; if there be constipation, he gives naphthol and salicylate of magnesium, each 4 grs.

According to Huchard, the decrease of mortality in cases of ileotyphus treated with salicylate of magnesium is so great that the most enthusiastic followers of Brant's water treatment have just cause to be envious. The action of the drug on the typhoid fever patient is seen in the disappearance of weakness, in the disappearance of the foul smell about the mouth, a decrease in the swelling of the abdomen, and a lessening of the decomposed odor of the fæces. In cases where the drug had been used from the first, complications were rarely observed. In a series of 25 cases that occurred to me during the fall of 1888 and treated with antiseptics, there was a mortality of 1, or 4 per cent. The subjects were all convicts, and the treatment was commenced early in every case. The one that ended fatally was the subject of two distinct attacks, with an intervention of three weeks, during which time the man became the subject of mumps, as it was epidemic in camp at that time. The second attack was severe and lasted three weeks, when death took place from exhaustion.

It does not seem necessary to review the different plans of treating typhoid fever that have been accepted from time to time, varying from the heroic use of the water treatment or cold bath and antipyretic drugs to the expectant plan, nor to even mention the remedies that are mostly in use, except to say that I believe every one that has gained any repute in the treatment of typhoid has more or less antiseptic power.

While we accept typhoid fever as depending on a specific germ, operating chiefly, if not entirely, in the alimentary tract, there seems to be but one rational treatment: (1) Clear the bowel thoroughly with an antiseptic cathartic—and there is none better than calomel; give pure water freely to aid its action; afterwards keep the bowel acting as often as is consistent with the preservation of the patient's strength, with laxatives, if needed. By this means at least a portion of the poisonous agent will be eliminated. (2) Administer some good antiseptic in small and frequently repeated doses. We thus prevent the rapid increase of the germ until elimination can be effected by the bowel.

The new antipyretics, acetanilid and antipyrine, seem to fill an office quite their own during the first few days in promoting the comfort of the patient, lessening the temperature, and protecting the nervous system, without any evil effect, if given in small doses and not continued too long. The diet should be liquid and easy of digestion, not too much concentrated, and in quantities less than the normal amount, in proportion as digestion is hindered by the disease, to which I believe the appetite is a fair index.

Having closely studied this plan of treating typhoid fever for the last few months, and having received good results from its application, I venture to announce that we have at last the power to control that dreaded disease, and frequently to abort it.

ULCERATION OF THE CORNEA—A COMMON CAUSE OF BLINDNESS, WITH REMARKS ON TREATMENT.

By Joseph A. White, A.M., M.D., Senior Surgeon of the Richmond, Va., Eye, Ear, Throat and Nose Infirmary.

(Read before the Medical Society of the State of North Carolina, at Elizabeth City, April 16, 1889.)

In presenting to your consideration a short paper on "Ulceration of the Cornea," I am prompted by a desire to be of such service to my professional brethren here assembled as my experience in this particular may permit, and also to elicit opinions on this subject that may be equally advantageous to us all. This affection is so common, is produced by so many different causes, is so trying to the patience of the physician, and so destructive to eye-sight, if not properly treated, that I am sure a few words about it will not be amiss. I speak of "ulceration" only, because "abscess" of the cornea nearly always changes into ulceration, and, therefore, this term practically covers the ground of all the destructive processes in this structure.

Under this heading, then, may be comprised superficial and deep-seated abscess, superficial and deep ulceration or sloughing, whether due to lowered vitality caused by general troubles; or, accompanying exanthematous diseases; or, resulting from defective innervation (paresis or paralysis of the fifth pair); or, from inflammation of the conjunctiva; or, from traumatism.

Superficial ulcerations, such as occur in phlyctenular keratitis, etc., are not of serious consideration, although frequently intractable to treatment for a long time. The little ones (for these troubles appear most frequently among children) suffer much from pain and intolerance of light, etc., but they nearly always get well. Whilst there is much pain and irritation about the eyes, the best treatment is installation of a solution of eserine or pilocarpine with cocaine, two or three times a day, out-door life, dark glasses, and in bad cases the application of a compress bandage, *provided there is not much conjunctival secretion.*

Conjunctival secretion, in any noticeable quantity, is always a contraindication to the use of a compress bandage in any and all eye affections. Frequent bathing of the eyes in *hot water* for a quarter or a half hour, and the use of antiseptic washes, such as a bichloride of mercury solution (1 to 3000), will be of great service Never confine such cases to the house and dark rooms, as fresh air and tonics are the basis of treatment. When the symptoms of irritation have subsided, stimulating applications, such as the *yellow oxide ointment,* should be used to clear up the opacities and prevent recurrence of ulceration. I am in the habit of using the following:

℞.—Hydrarg. oxid. flav., gr. 2.
Oleic acid, gr. 2.
Cocaine muriat., gr. 4.
Vaselin, drachms 2. M.
Sig. Apply to eyes twice daily.

Whilst in superficial ulceration there is comparatively no risk of loss of sight, it is quite different in the forms of deep ulceration.

Both in the sthenic and asthenic cases there is always the impending danger of *perforation* of the cornea from extension of the ulceration, with consequent prolapse of the iris and frequent loss of vision. Possibly there is no more prolific source of blindness than the ulceration of the cornea resulting from the purulent conjunctivitis of new-born children. Probably there is no physician present who has not had such a case in his practice. In these cases the safety of the eyes depends more on the *prevention* of the ulceration than on its arrest or cure after its inception. Whilst not strictly within the scope of this paper, it may not be out of place to make a few suggestions in this regard. If all physicians would make it a rule to see that the eyes of new-born children are thoroughly washed, and a few drops of a bichloride of mercury solution (1 to 3000) instilled several times daily for several days after birth, there would be no conjunctivitis, and consequently no ulceration of the cornea and loss of sight. This should be especially done when the mother has any vaginal discharge. It can do nothing but good in any event.

Supposing, however, such a precaution had been neglected and in a few days a conjunctivitis declares itself, in a very large proportion of the cases prompt intervention will prevent any serious results. Frequent cleansing with the bichloride solution (say every hour), the use of cold applications and an astringent solution, such as the following, will probably cut the affection short:

℞.—Aluminis, gr. 4.
Zinc, sulph., gr. 2.
Aquæ, distill., oz. 1. M.
Sig. Drop in eyes as often as required.

Should the lids continue to swell and the discharge increase, *ice compresses* should be applied, the antiseptic wash continued, the astringent application used more frequently, every half hour, if necessary, and a nitrate of silver solution (10 grs. to the ounce) applied to the everted eye-lids twice daily. I do not advise the general use of the mitigated caustic stick, because its application requires special knowledge and care. The cornea must be carefully watched, and if there should be any cloudy appearance, the *cold* applications and astringents must be at once stopped, *hot* compresses substituted and a solution of eserine dropped into the eye. If the cornea becomes *ulcerated* and rupture is threatened, *paracentesis* of the anterior chamber should be performed, and the incision kept open by passing a probe into it daily. If the above course is followed, blind asylums would not be in such demand by the unfortunate victims of this terrible disease. Very much the same treatment is applicable to purulent inflammations of the conjunctiva among adults, whether of catarrhal or specific origin.

Whilst there is little practical utility in discussing the different forms of deep ulceration of the cornea, because, with slight variations, the same treatment is applicable to all of them, I will merely mention the more prominent varieties, such as—

1st. The non-inflammatory, or asthenic ulcer.

2d. The inflammatory, or sthenic ulcer.

3d. The rodent ulcer (ulcus corneæ serpens), or so-called hypopyon keratitis.

The etiology of the first form is rather obscure, and it is more commonly found in persons who have formerly suffered from superficial corneal troubles, or maybe have old corneal opacities. The ulceration is usually *central*, or near the centre, and very intractable to treatment; even under the most expert guidance, weeks or months may elapse before a cure is accomplished.

The second form is more commonly near the periphery of the cornea and quite frequently due to traumatism, such as a blow from a switch, twig, whip, etc. Sometimes it starts as a small corneal abscess and developes into dangerous ulceration, with hypopyon of pus in the chamber, and usually such patients are persons over forty years of age.

The third form, hypopyon keratitis, or rodent ulcer, seems to belong to old age, the subjects being generally over sixty, who frequently have some trouble with the lachrymal sac. This form, also, is often of traumatic origin, a slight blow in the neighborhood of the orbit being sometimes a sufficient cause. It is characterized by its rapid progress and frequently intense suffering.

In all the forms, as I have already observed, the dangers to be apprehended are extension of the ulceration over a large expanse of the cornea and its subsequent rupture with prolapse of the iris. The object of the treatment is to prevent this breaking down and rupture of the cornea. The means at our disposal to accomplish this result are, *locally*, eserine, pilocarpine, antiseptics and surgical intervention; *internally*, iron, quinine and other tonics. When the cornea becomes weakened by the ulceration it gradually gives way before the *normal intra-ocular tension* and rupture occurs. It is well known that both *eserine and pilocarpine* diminish the intra-ocular tension, and consequently their application lessens the risk of rupture. Moreover, both are vaso-motor stimulants, and as such tend to improve the local circulation, and the nutrition of the cornea always defective in ulceration. They accomplish another good by contracting the pupil, and consequently lessening the photophobia, so frequently a distressing accompaniment of this affection. Sometimes eserine causes considerable pain, and when it does so, I substitute pilocarpine for it, although I generally use them together. Any symptoms of *iritis* would be a contraindication to their use, and this is an important point to notice. Whilst these remedies should be the basis of the local treatment, we have useful adjuvants in hot water, cocaine, etc., and antiseptic washes.

When a case of deep ulceration of the cornea is brought to me I at once cocainize the eye, cleanse the ulcer thoroughly with the bichloride solution and determine its extent. If iritis is not complicating it I instil eserine until the pupil is thoroughly contracted. Then, if perforation does not immediately threaten, I cauterize the ulcer very carefully with a 2 or 3 per cent. solution of nitrate of silver, and order hot water to be applied for about a half hour. I give the patient the following :

℞.—Iodoformi pulv., grs. 10.
Eserine sulph., grs. 1½.
Pilocarpine muriat., grs. 3.
Cocaine muriat., grs. 5.
Vasaline, drachms 2. M.
Sig. To be applied to the eye several times daily.

A little of this is put into the eye and a compress bandage applied but removed if it produces pain. Iron and quinine are given internally; any specific diathesis is counteracted by appropriate remedies; the hot water applications (as hot as can be borne) are used for a half hour, three times daily, and the above salve used as often as necessary. If there is any *iritis*, atropia sulphate is substituted for eserine and pilocarpine in this salve, but such cases do not progress so well under treatment. When the eye is cleansed the bichloride solution is used in place of water.

Indolent ulcerations of an asthenic type are stimulated by touching with the galvanic cautery, for which purpose I have had a special electrode made. Great pains subdued by antipyrine in many cases, and if it fails morphia is substituted for it. If perforation threatens I always open the anterior chamber and make a good size incision at the corneal margin with the lance-shaped knife, so as to thoroughly evacuate the contents of the chamber of lymph, pus, blood, etc. A good size incision is easier to reopen daily than a small one, and this I do every day until the ulcer begins to heal.

In "Rodent Ulcer," when the ulceration is progressing very rapidly, instead of a large paracentesis at the corneal margin, I perform Saemisch's operation of splitting open the ulceration through its centre with a Graefe knife, making puncture and counter puncture in the *healthy* cornea. If perforation has already occurred with prolapse of the iris, I cut off the protruding iris, and follow the same line of treatment as above described, cutting off the prolapse as often as it protrudes. When the healing process starts and the cornea begins to cicatrize, I add yellow oxide of mercury to the salve mentioned and continue the same treatment.

REPORT OF THE CHAIRMAN OF THE SECTION ON THERAPEUTICS AND MATERIA MEDICA.

By S. W. Stevenson, assisted by Robert S. Young, Chairman.

(Read before the Medical Society of the State of North Carolina, at Elizabeth City, April 16, 1889.)

ACETPHENETIDINE.

Mr. President and Gentlemen of the Medical Society of the State of North Carolina:

Dr. Way, in his able paper at the last meeting of this Society, referred to the above drug in the following language: "This new candidate for therapeutic favor as an antipyretic has not as yet been used to any very great extent. It is a faintly-reddish powder, odorless and tasteless, and is analogous in chemical compositions to acetanilide."

"Kobler (*Wiener Med. Wach.*), as a result of his studies of its action administered in 50 cases of disease—phthisis, pneumonia, typhoid fever, etc.—draws the following deductions:

'1. It is an efficient antipyretic.

'2. It produces no ill or unpleasant effects.

'3. The dose is by quantities of 1½ grammes.

'4. The administration of a considerable dose (8 to 10 grammes) is more useful than the repetition of small doses hourly or every two hours.

'Additional testimony on this drug at present is wanting and more extended observations are necessary in order to determine its true worth as a remedial agent.'"

Since the above was written much additional testimony has accumulated.

At the meeting of the Pharmacological and Therapeutic Section at the recent meeting of the British Medical Association at Glasgow, a valuable paper was presented by Dr. Dujardin-Beaumetz on Phenacetine, which is another name for the drug under consideration. It was pointed out that there are three phenacetines, or acetphenetidines, the meta—para- and ortho-acetphenetidines. The first possesses no therapeutic power, while the second is more powerful than the third. The history of the drug was discussed and its physical and chemical properties noticed. In investigating the physiological action of this agent its insolubility was found to hinder its subcutaneous administration and rendered experimentation on animals difficult. It was definitely made out that if phenacetine was toxic in character at all, it must be so in a very slight degree. It was also made out that therapeutically the phenacetines have a double action. They lower temperature (especially in pyrexia) and soothe pain. In fever ½ gramme lowers the temperature from 1° to 2° C., the effect lasting usually about four hours, though sometimes longer.

The report, as I copy it from the October number of the *Therapeutic Gazette* for 1888, states that abundant sweating is produced, and often a sensation of collapse. Phenacetine in fevers shows itself superior to antipyrin, and antipyrin in producing marked antithermic effects without toxic phenomena. But it is as an analgesic the drug outrivals these its predecessors; while in this respect it is quite as powerful as antipyrin or acetanilide, it does not cause the pain in the stomach or the scarlatina-form rash of the former, nor does it give rise to the cyanosis of the latter. The doctor stated that he had given it for months in daily quantities of from 1 to 2 grammes, and had never observed any bad effects. He had used it for the relief of every form of pain—neuralgias, migraine, rheumatic pains, muscular rheumatism, the lightning pains of tabes, etc., and always with the best results. In hysteria and hysterical pains it is superior to bromides, and it procures sleep in nervous insomnia. He regards it as a narcotic as well as an analgesic, as a depressor of the excitability of the medulla. The dose is 1 to 2 grammes daily, given in single doses of ½ to 1 gramme—best given in *cachets*. The doctor closed his paper by saying :

1. In the phenacetines we have excellent antithermic and analgesic remedies.

2. Of the three only two possess therapeutic properties—para- and ortho-acetphenetidine.

3. The latter must be given in larger doses than the former.

4. These two salts seem to be devoid of toxic properties.

5. They are powerful antithermics and very active analgesics, which ought to be substituted for antipyrin, for the following reasons :

1. Because they are non-toxic,

2. Because they act in doses one-half smaller.
3. Because they are one-half cheaper.
4. Because, finally, there is no monopoly in their manufacture.

H. C. Wood, of Philadelphia, in the *Therapeutic Gazette*, for March, 1889, says that extended experiments on dogs and rabbits have shown that this drug is almost inert in from 15 to 30 grain doses given daily for days at a time. When given in from 45 to 75 grain doses to large dogs, it produces accelerated respiration, sleeplessness, disturbed coördination and vomiting, and in still larger doses methæmoglobin is produced, as in antifebrin poisoning. Even after this symptom has occurred, however, recovery has almost invariably taken place.

Dr. Hoppe, of the Jewish Hospital in Berlin, has made a number of experiments on men in administering from 15 to 40 grains, and has found that, after a time, the system has become accustomed to the remedy. The only disagreeable effects produced by these amounts were sleepiness, dizziness, nausea and slight chilliness. He has also tried it in twenty-five different forms of neuralgia, in a majority of which relief of pain followed its employment. Various cases of headache were relieved in half an hour by its use, and he believes that in neuralgia, as in febrile disease, it is equally as efficacious as antipyrin, and is preferable to it on account of its freedom from danger.

Dr. Rumpf, another German physician, has made like experiments, and concludes that, as an antipyretic, it is equal to any that has been produced, and that in 8 cases of hernicrania doses of 15 grains produced relief, while in 7 cases of neuralgia, of different nerves, it has likewise been very satisfactory.

H. C. Wood, editor of the *Therapeutic Gazette*, says in the March number for 1889 that the attention of the English-speaking member of the profession has not been attracted by this drug to any extent as yet. Therefore we can offer no American opinions.

PYRODIN.

This is an antipyretic remedy of still later discovery than phenacetine. It is one of the derivatives of coal tar. It is a white crystalline powder, very sparingly soluble in cold water and almost tasteless.

Dr. Dreschfield, of Manchester, has tried its effects extensively on healthy persons and on patients suffering from various diseases. Doses of from 8 to 12 grains, on consecutive days, produced no ill-effect on healthy individuals. Similar doses markedly lowered the temperature in from two to four hours in cases of pneumonia, scarlet fever, typhus and typhoid; but occasionally toxic effects are produced, and this seems to be more particularly the case in typhoid fever and in rheumatism.

Dr. Wild has investigated its physiological effects on animals in the laboratory of Owens College. The toxic effects are the same as in aniline poisoning, and depend on the action of the drug on the blood, producing hæmoglobinæmia, or even destruction of the blood disk; aniline is found in the urine.

The editors of the *Lancet* caution the profession against giving more than 12 grains at one dose, and against giving it oftener than once in eighteen or twenty-four hours, and against continuing it for longer than a few days. It is, in their opinion, a very potent and dangerous drug, and should be given with extreme caution. No mention has yet been given of its possessing analgesic properties.

The writer has seen an oily, clear, yellowish liquid, called pyridin puris, manufactured by Merck, of Darmstadt. It seems to be volatile, and has a very strong offensive odor, and is given in 20-drop doses, by inhalation, from a hot plate, in the paroxysms of asthma, which it relieves in some instances. This preparation is not to be confounded with pyrodin proper, although it may be of similar origin; whether it is or not, the writer has no means of knowing.

SULPHONAL.

This new hypnotic seems to be receiving unusual attention by the medical world just at this time. Its investigation almost amounts to a sensation. In a New York journal (*Medical Classics*), dated February, 1889, copied from the *North Western Lancet*, the following allusion to sulphonal is made: "Sulphonal is perhaps attracting more attention just now than any other new drug, for the many reports which have been made upon it go to show that it is the ideal, long-desired hypnotic, tasteless, harmless, certain in its action, and incapable of setting up a habit. It is not in anyway an anodyne, and is therefore not adapted to cases where sleeplessness is due to pain, but for the wakefulness of excitement, worry or insanity, it seems to be a specific." The single massive dose is the most certain in its effects given half an hour before bedtime. When there is maniacal excitement, as much as 75 grains may be necessary, but for other cases 15 grains is the proper dose. A good point about the drug is, that its effects are repeated night after night without increasing the dose. It is not readily soluble, and should be accompanied by a hot drink, etc.

Salgo, up to November 22, 1888, had in the Insane Asylum Buda-Pesth given it in paralysis agitans, and found it less efficacious than chloral and not better than paraldehyde.

In some cases its hypnotic effects were entirely wanting, but in most cases it produced sleep without any unpleasant after-effects, and in all cases the drug was taken without difficulty by the patients.

Langgaard and Rabbo, of Paris, during the year 1888, experimented on themselves and on various patients, with results appearing to confirm the reports of its earlier advocates. Rasin, of Germany, concludes, likewise, that sulphonal, in 30 grain doses, is not less safe than morphine and chloral, and that even double the dose may be given with impunity, and even with satisfactory results in uncomplicated insomnia.

Œstricher, of Berlin, pronounces sulphonal to be a perfectly safe hypnotic, without any influence on the respiration, pulse or renal secretion, with the exception of in heart affections, and he pronounces it much safer in these than chloral, and on account of its freedom from taste and odor he prefers it to aniline, hydrate or paraldehyde.—*Ther. Gaz.*, Aug. 28.

Cramm (*Münch. Med. Woch.*, November 24, 1888), has employed sulphonal on four hundred and seven different occasions—in 92 cases of mental trouble with a positive success—in 92, 6 per cent., producing sleep of five or more hours duration. The editors of the *Therapeutic Gazette*, from which this is copied, thinks that sleep may be produced in nervous cases by the mental suggestion of it to the patient, and says that Cramm produced sleep as successfully in three cases with common salt as with sulphonal.—*Ther. Gazette*, August, 1888.

Rosenbach (*Wiener Med. Blätt.*, November 26, 1888) recommends the addition of from 1-6 to 1-4 of a grain of morphine to sulphonal as increasing its efficaciousness.—*Therapeutic Gazette*, August, 1888.

Dr. Hilsman writes in the *Gaz. Hebd. des Sciences Med.*, September, 1888, that he has recently had occasion to employ this new hypnotic in several patients already accustomed to the use of morphine, chloral, paraldehyde and methylal, and has obtained satisfactory results. In one phthisical case, who was unable to sleep on account of violent cough, sulphonal in a 15-grain dose produced a tranquil sleep of eight hours duration. Dr. Hilsman mentions a case of heart disease accompanied by uterine pains and loss of blood, in which sulphonal produced natural sleep; another case, 70 years old, suffering from endo-arteritis senilis, accompanied by paroxysmal pains, in which both morphine and antipyrin had failed to give relief, sulphonal rapidly relieved the pain and sleep was produced.—*Therapeutic Gazette*, October, 1888.

A report of the use of this hypnotic in the wards of von Ziemssen, as given in the *Centralblatt für Klinische Medizin*, October 6, 1888, showed that of 27 cases 72 per cent. obtained at least six hours sleep after its use; in 9 per cent. it was incomplete in its action, and in about 19 per cent. the result was negative. There were accompanying symptoms in 20 per cent. of fatigue, indisposition, ringing in the ears, headache, vertigo; vomiting was noticed in one or two cases after its use. It is slower in its action than chloral hydrate, and its effect is obtained in one-half to three hours. It has no special influence on the pulse, temperature or respiration. The dose varies from 15 to 30 grains; as a rule 15 grains are sufficient. It has the advantage over the other hypnotics of less marked odor and taste and in not affecting profoundly the vital centers.—*American Journal*, December, 1888.

Dr. William Flint, of New York, reports 33 cases in which sulphonal has been employed and in which the observations have been made with unusual care. The drug was given at bedtime enclosed in capsules, and the patients were not informed of the nature of the drug or of its expected action. The average length of time at which sleep ensued was about an hour. The average duration of the sleep was a little over six hours, and success attended its use in about 82 per cent. of all trials. The cases were unselected and many were unsuitable for experiment with a pure hypnotic. The single objectionable after-effect was moderate somnolence on the morning following the administration of the drug. In none of the cases has the circulation, respiration, appetite, digestion, cutaneous or renal secretion been in the least affected.—*American Journal*, March, 1889.

Connally Norman, Superintendent of the Dublin District Richmond Asylum has used sulphonal in 30 cases, of which he reports 22. In only two persons were any bad results noticed; these were especially unfavorable cases, and where other sedatives had failed. No gastric or intestinal trouble was observed. The drug seemed to lessen the tendency to self-abuse and erotic excitement. In some recurrent cases it seemed to shorten the attack. In comparing sulphonal to the more modern drugs, its advantages are that it has no odor and is tasteless and produces no gastric derangement nor troublesome head symptoms; it does not affect the appetite and the sleep is relatively "natural." Its disadvantages are its bulk and insolubility. Its action is slow, and it sometimes produces giddiness and a sense of weariness and somnolence on the following morning, and one case of severe, but not fatal, poisoning has been reported, in which 60 grains were given at 9 p. m., and 30 more were given at midnight, producing decided muscular incoördination, lasting about six days.—*American Journal*, March, 1889.

Sulphonal is being investigated by the best men of the world. They seem to be anxious to find merit in it, and are giving it a fair trial; on its worth it must stand or fall, its future time alone can reveal.

PICROTOXIN AS AN ANTIDOTE TO MORPHINE.

Prof. Arpad Bokai has lately published in the *Apoth. Zietung* an interesting preliminary statement of a series of experiments with picrotoxin as an antidote for morphia. His investigations lead him to pronounce picrotoxin the most rational antidote for morphine, the effects of the two drugs on the centers of respiration and on the spinal cord being antagonistic. Morphine diminishes the activity of the respiratory centers, while small doses of picrotoxin have the opposite effect. As death from morphine is caused by paralysis of the respiratory nerve centers and picrotoxin prevents this paralysis, therefore picrotoxin, the author thinks, is calculated to save life in cases of morphine poisoning. The rapid decrease of arterial pressure caused by morphine is counteracted by picrotoxin, which strongly contracts the vessels which feed the centers of the medulla oblongata. The two drugs also exert antagonistic action on the cerebrum, though this action is of less importance in the preservation of life. The chief physiological antidote to morphine which heretofore has been used is atropine, which the editor of the *Druggist's Circular and Chemical Gazette*, from which I copy this article, thinks to be successful, must be administered in dangerous doses, and therefore he thinks a new antidote, free from this objection, will prove a valuable addition to the armamentation of the physicians. Prof. Arpad Bokai thinks, also, that picrotoxin might prove valuable as a prophylactic against chloroform asphyxia. Whether the opinion uf the editor of the *Druggist's Circular and Chemical Gazette*, that atropine, to be of value in morphine poisoning, must be administered in dangerous doses, is correct or not, is a debatable point in the writer's mind, but he will leave that to be supported or refuted at the proper place and time and by the proper authorities.

ATROPINE IN HEMORRHAGE FROM THE LUNGS.

The editor of the *Therapeutic Gazette*, in the February number, for this year, states that there is no fact better established in physiological therapeutics than the power of the alkaloid atropine to contract the capillaries, yet he states that he cannot remember of ever having read of its being employed for the purpose of checking hemorrhage, excepting in the following case:

At the meeting of the Medical Society of Victoria, on the 14th of last November, Dr. R. A. Sterling narrated a case of profuse bleeding from the apex of the left lung, which hypodermic injections of ergotin and other commonly used remedial measures failed to check. The hemorrhage was sufficiently severe to threaten death by suffocation, when the injection of the 1-150 of a grain of atropine checked and controlled it. During twenty-four hours the injections were repeated at intervals of six hours; then, thinking the stoppage might be accidental, the treatment was omitted for twelve hours with the result of a fresh and severe attack, which was at once controlled by a renewal of the treatment.

In the writer's experience atropine is a drug of power, and its uniformity of action can always be depended upon; in the above case its therapeutic effects literally fulfilled its physiological promises—this is just what a drug should do, and it is, in our opinion, what atropine will generally do.

SELECTED PAPERS.

PERITYPHLITIS IN CHILDREN.

By F. Huber, M.D., Clinical Chief in Diseases of Children, Vanderbilt Clinic, New York.

C. H., male, 8 years old. Three days before I saw him he was seized with vomiting and diarrhœa, attributed to eating. Castor oil had been administered without relief, though bowels were freely moved. At my first visit the abdomen generally was tender, though the pain was more intense in the right iliac fossa. The abdominal muscles on both sides were rigid and legs were drawn up. Some difficulty in urinating. The pain was readily controlled by small doses of morphia. No tumor or dulness in the ileo-cæcal region. Under the use of small doses of morphia and bismuth, the general symptoms improved; the vomiting ceased, pains grew less, but the tympanites and abdominal tension became more marked. On the sixth day of the illness a rectal examination demonstrated a fulness and some bulging to the right and somewhat posteriorly in the rectum. It was then determined to explore the right iliac fossa, and accordingly, a small aspirating needle was introduced about one-half inch above the anterior superior iliac spine, directed downward, inward and backward, pus being readily detected. No tumor could be detected by external palpation on account of the tympanites and rigid condition of the abdomen. Hepatic dulness preserved. Temperature 101½°; respiration, 20; pulse, 80.

Diagnosis.—Perityphlitic abscess with acute general peritonitis. The peritoneal inflammation was not regarded as septic in character, but was thought to be due to an extension of the inflammation to the general peritoneum. An incision was now made a little above and along the outer half of Poupart's liagament, the tissue divided layer by layer, and the abscess opened, pus with a fæcal odor escaping. The finger was now passed in and the cavity explored; no fæcal concretion or sloughing appendix was felt. Two drainage-tubes were then inserted, one passed upward and backward, the other downward to drain the pouch felt through the rectum. The cavity was then washed out, and a bichloride gauze and borated cotton dressing applied. On the third day fæces were discovered on the dressing; four days later two small fæcal concretions were washed out in irrigating the wound. The fæcal discharge ceased in a few days; the drainage tubes were then removed, and the wound healed in about two weeks, followed by recovery of patient.

F. D., male, 10 years old, had not been in good health for some time past. During the four days prior to the time he came under my care he had been compelled to remain in bed because of the intense abdominal pains, particularly in the region of the cæcum; had been feverish during this time, vomiting continually, very much prostrated, considerable diarrhœa. At my first examination I found him lying on his back with his right thigh flexed, with rigidity of the abdominal walls, particularly on the right side. Palpation, cautiously and gently performed, demonstrated the existence of a tumor in the right iliac fossa. Urination frequent and difficult. Pulse feeble, tongue dry and brown; patient in a typhoid state.

Rectal examination revealed a fulness to the right and somewhat posteriorly. A large hypodermic needle introduced into the most prominent portion of the swelling revealed the presence of a stinking pus. Diagnosis, perityphlitic abscess.

Two hours later he was chloroformed, and, with the assistance of Drs. Denhard and Horn, the abscess was opened; the dissection being made layer by layer, and about six fluidounces of fetid pus escaped. The cavity was then carefully explored with the finger, but no foreign body or concretion could be felt. Two pouches were detected, one running up and backward, the other downward towards the rectum. Two drainage-tubes were then introduced, the larger—five inches in length—reached to the bottom of the pouch along the rectum; the second drained the upper portion of the wound. Irrigation and antiseptic dressing applied. A small hypodermic of morphia then injected. The pain ceased, the vomiting and the difficulty in urination disappeared at once. Bowels moved spontaneously the following day. On the fourth day a ragged slough, about four inches long, was washed out in irrigating the wound. The tubes were gradually shortened and then dispensed with, a small sinus being left. On the twenty-third day a large fæcal concretion was discovered on the dressing, after the escape of which the sinus closed in a few days. Perfect recovery followed.

In addition to these two in which an operation was required, I have observed at least a dozen cases in children in which resolution occurred. In three of these recurrences took place. In one case three times within a year. I have also met with four cases of perforative peritonitis, all fatal.

These cases will serve to introduce the subject of perityphlitis in children.

Typhlitis, inflammation of the walls of the cæcum; perityphlitis, inflammation of the peritoneum covering the cæcum; paratyphlitis, inflammation of the connective tissue behind the cæcum; and appendictis, inflammation of the appendix, are various terms employed to designate the morbid train of symptoms, characterized by pain and tenderness, in the right iliac fossa, the presence of a tumor in this situation which may resolve or go on to the formation of pus with local, or perhaps general peritonitis, accompanied by vomiting, febrile disturbances, constipation or diarrhœa, and dorsal decubitis, with thighs flexed. As yet we are not able to differentiate clinically between the affections of the cæcum and those of the appendix; the term perityphlitis, therefore, is employed by many authorities in a wider sense, to cover the complex inflammatory processes in this region, rather than to limit the expression to its more correct anatomical application. The affection is of frequent occurrence in the young, and shows special predilections for the male sex. This is true in infancy and early youth, as well as in adolescence. Of 21 cases collected by Gerhardt, 13 belonged to the male sex. Meigs and Pepper observed 13 cases which resolved, 8 being male and 5 female; and of 43 cases collected by them, in which recovery took place, 27 occurred in males. Of 6 cases of perforation of the appendix, under fifteen years of age, 4 were males, 1 female, 1 sex not given.

Matterstock found that 9 per cent. of the cases collected by him occurred below the age of ten years, and 30 per cent. between the ages of ten and twenty years. Labardie-Lagrave met with 13 cases between the ages of ten and fifteen out of a total of 122. Demme and Bouchut saw 72 cases in 90,000 children. Volz found that in 35 cases in which the autopsy confirmed the diagnosis, 11 were in children. Lewis reports 47 cases, 6 of which were in children under ten years.

The anatomical peculiarities of the cæcum and appendix, the greater irritability and proneness to inflammation of the intestinal tract in the young, constipation, cold and exposure, indigestible food, blows, and the strumous diathesis have been regarded as causes of the disorder. The appendix is relatively larger and longer in the newly-born child than in the adult. The colon of the newly-born is only four times, whereas that of the adult is eight times, as wide as the process. This certainly yields predisposition to the entrance of foreign bodies into the process in children. Hecker and Bute found a concretion of meconium in a newly-born child. Betz reports a perforation of the appendix in a child seven months old, and Faber one in a girl three and a half years of age. Cases in the very young are rare, for some predisposing cause is necessary. A previous typhlitis or peritonitis—even diarrhœa, constipation, dysentery, typhoid fever, tuberculosis, or any lesion causing a moderate local peritonitis with resulting adhesions of the appendix—may cause greater patency with diminished elasticity in the vermiform process, and thereby favor the formation of concretions or the entrance of foreign bodies. About three quarters of the recorded cases of perforation of the appendix are due to concretions, infrequently to foreign bodies.

In 49 cases in children, fæcal concretions were found in 27 instances, foreign bodies in 3, and nothing abnormal in the remaining. In the two cases presented this evening, fæcal concretions escaped with the discharge from the wound; two smaller ones in one case and a large one in the other.

Abnormal conditions of the mucous membranes undoubtedly precede the formation and lodgement of the masses, which may remain inert, or, through the agency of germs or virus of disease ingested in the food or drink, act as irritants, and causes local gangrene or peritonitis, and thereby set up the train of symptoms now under discussion.

Inflammatory conditions, except as the result of foreign bodies or fæcal impactions, are not frequently met with in the cæcum. Primary cæcal perforations are exceedingly rare, though Henoch reports a case. In the greater number of instances the appendix is the seat of the trouble, and a foreign body, or more frequently a fæcal concretion, will be found in the appendix, in an abscess cavity or free in the peritoneum. The appendix itself may be inflamed, filled with mucus or pus, may be ulcerated, perforated in one or more places, gangrenous or entirely destroyed. The walls may give way as the result of distention. Dr. Wilks saw a case in which the appendix was dilated to the size of the ileum, and contained three to four ounces of white, odorless mucus. Old and recent adhesions are frequent. Abscesses are encountered in the fossa, behind the cæcum, in the pelvis, or in the right lumbar region, depending upon the anatomical variations in the situation of the appendix. The existing peritoneal inflammation may be limited to the neighborhood of the affected organ, may be general, or may be suppurative in character.

The most prominent symptoms are pains and tenderness in the right iliac fossa, dorsal decubitus with knees drawn up, rigidity of the abdominal walls, particularly of the right side, and an irregular tumor, more or less distinct, in the ileo-cæcal region. Febrile movements, irregular in character, also exist. To this series we may add diarrhœa or constipation, nausea or vomiting, colicky pains irregularly intermitting and of greater or less severity. More or less prostration and a typhoid state may be present. More or less difficulty in urinating may also exist.

The disease may begin suddenly with very severe pains, more or less shock, the iliac pain being obscured by the general peritonitis, and the case terminates fatally in a number of hours or runs along for one to six days. Or the pains may be intense, some shock exist, and general tenderness be found over the entire abdomen; more, however, in the right iliac fossa. After the lapse of a few days or a week a tumor can be detected and an abscess results. In a third class of cases the pain may be moderate, more or less vomiting and some tympanites. The swelling soon shows itself, and pus is found. Finally, we have another class in which—though the initial symptoms may have been severe, and a tumor forms—resolution will take place. Relapses and recurrences are frequently observed among the latter.

In children there is frequently a prodromal stage, lasting for weeks or months before a definite diagnosis can be arrived at. We find anorexia and vomiting, constipation, and at times diarrhœa with colicky pains about the ileo-cæcal region. In some cases the pains may be felt in the epigastric region or in the left ileum, as was the case in those instances mentioned by Bouchut, Herzfelder and Traube. In several cases Jacobi found the pains most marked along the transverse colon. Some difficulty may be met in walking or standing, the patient favoring the right side. Examining, we find pain, with more or less rigidity of the right side of abdomen, some fulness or a distinct tumor. There may be tingling or weakness in the right leg, painful sensations and even loss of power. The tumor may not be perceptible, and we may only be able to appreciate increased resistance to pressure and exquisite tenderness along the cæcum.

In practice, according to Dr. Bull, two classes of cases are met with:

1. Catarrhal perityphlitis, which tended to resolve; it occurs in a large number of cases, and may go on to suppuration.

2. Suppurative perityphlitis, when suppuration, perforation, or gangrene occurred with (*a*) spreading peritonitis, (*b*) limiting or circumscribed peritonitis or "intra-peritoneal abscess," and (*c*) cellulitis, iliac or lumbar, or both, "extra-peritoneal abscess," and finally, (*d*) portal phlebitis, with or without hepatic abscess. The extra-peritoneal abscess (*c*) is secondary in most cases; but where the appendix is extra-peritoneal, or where it or the cæcum had been excluded from the peritoneal cavity by old adhesions, it might be primary.

As has been well said, the life of the patient is in the hands of the general practitioner, as the case is first seen by him. The question of diagnosis is of the greatest importance, and the early recognition of the case contributes materially to the welfare of the patient. In a case which I saw with Dr. Newfield, only the most careful examination enabled us to exclude hip-joint disease. Dr. Gibney has observed a number of cases in children, from eight to ten years of age, who presented the characteristic deformity of hip-joint troubles. The peripheral pains along the right lower extremity may be misleading. The history of the cases and the presence of rigidity and tumefaction in the ileocæcal region will exclude typhoid fever. In intussusception we have bloody discharges from the rectum with severe tenesmus. The characteristic rectal tumor will also clear up the case. Impaction of fæces is differentiated by the prior history of constipation, by sausage-shaped tumor along the ascending colon, by the slight tenderness and the peculiar feel.

In a girl of eleven years of age, an ovaritis of the right side, due to gonorrhœal infection, presented some of the symptoms of perityphlitis; the characteristic vaginal discharge and a vaginal examination excluded any affection of the appendix.

The difficulty of diagnosis at times is well illustrated by the following case:

A girl of seven years of age had had a vaginal discharge for a short time. She was an exceedingly anæmic patient. No history of gonorrhœal infection and no cause for the vaginitis could be made out. The general weakness and some soreness about the lower part of her abdomen made her take to her bed. The same day vomited considerably, a little blood being found in the vomited matter. The abdomen generally not tender, some little soreness over the pubes. Pulse good, no pain, some diarrhœa (though constipation usually existed). No elevation of temperature. The little patient was in good spirits. At my evening visit I found her in a collapse, with severe pains in the right iliac region.

Diagnosis, perforation of appendix. Charles E. Denhard saw her and confirmed the diagnosis. The following day Professor Jacobi was requested to see the patient. In view of the rapid onset with collapse, pains more severe in the right iliac region, and the rapid spread of the inflammation, the diagnosis of general peritonitis, due probably to perforation, was confirmed. The same evening vomiting set in, and soon assumed a greenish character, the tympanites became more marked, and general abdominal tenderness greater. Temperature not over 101° (rectal). Pulse 130, very weak. The following day Professor Wm. T. Bull was called in consultation, with a view to the advisability of performing laparotomy. The diagnosis was confirmed, and, as soon as the consent of the parent could be obtained, a laparotomy was done by Dr. Bull, with, however, faint hopes of ultimate success, as the heart's action was very weak, pulse about 150. The patient was chloroformed by Dr. Denhard, and at the operation, done by Dr. Bull, considerable sero-purulent fluid was found in the abdominal cavity. The intestines were conjested, here and there some lymph was found—no adhesions between the folds.

The appendix was searched for and found *intact*, no fæcal concretion to be felt. The Fallopian tube and fibrinated extremity on the right side thickened and congested, and it now became evident that the infection had taken place through the genital tract, and had thus given rise to the peritoneal inflammation, simulating so closely a perforation of the appendix that the correct interpretation of the symptoms was only possible after the abdomen had been opened.

The cavity was now washed out with hot water, and the wound closed and dressing applied. A rectal injection of brandy and water was then administered, and the patient put to bed with the head low. The patient rallied, but the vomiting continued, and death took place twenty-four hours later.

The diagnosis, as a rule, is readily made. The pain and tenderness, together with rigidity of the right side of abdomen and the presence of a tumor, with the digestive disturbances, are sufficiently striking not to be overlooked.

Pepper lays great stress upon the necessity of examining per rectum to determine at an early date the existence of an inflammatory tumor and pus.

Constitutional symptoms do not enable us to make the diagnosis of pus, nor is it advisable to wait for distinct fluctuation. The thickness of the walls of the pus cavity, and the additional covering afforded by the abdominal muscles, make it extremely difficult or impossible to detect fluctuation even in very large abscesses. We are, consequently, forced to resort to the use of the exploring needle in order to arrive at a positive diagnosis. Bull says needle explorations are a justifiable and desirable method of diagnosis, though attended with some risks. These may be reduced to a minimum if care were taken to reserve the practice for cases in which the symptoms had lasted for several days, and in which a distinct induration tumor could be made out. The needle employed should be inserted obliquely (never perpendicularly), plunging it first near the iliac border and then into the lumbar region, pointing it forward and inward to the location of the cæcum. Gill Wylie, in cases of doubt, where there are chilly sensations or an elevation of temperature, considers it safer to open the abdomen in the median line and explore; his argument being that the sac of the abscess is rounded, and that while one of its aspects was adherent, another might be free. If punctured through the adherent portion, no harm results. If punctured through its free portion, however, the prick of the needle might allow its contents to escape into the peritoneal cavity and set up a fatal peritonitis. A case in which this happened terminated fatally in twelve hours in Bellevue.

The duration of the disease varies. It may terminate fatally in nine hours or last from one to five days. In children the disease is shorter than at a later period. When the case goes on to resolution it may last from fourteen to twenty-one days. Early operation and evacuation of the confined inflammatory products or pus materially shorten the duration of the trouble. If the abscess be allowed to burrow or rupture into the bowels or bladder, the resulting evil after-effect may extend over a long period of time. Even in cases which have resolved and are apparently in good health, adhesions resulting from prior inflammation, an encapsulated abscess, or fæcal matter temporarily shut off by adhesive inflammation, may light up new troubles through accident or indiscretion on the part of the patient. These relapses and recurrences may greatly prolong the duration.

Prophylactic measures may be resorted to in the young, particularly in those instances in which obscure and colicky pain are experienced at varying intervals. The least tenderness and pain in this region ought to be viewed with suspicion, and absolute rest enforced with a proper diet. In these insidious cases perforation in children has occurred after the use of laxatives or enema.

When an attack subsides, the greatest care should be observed to prevent a relapse. The bowels should be moved by enemata only, no purgatives. The restriction to fluid diet should be kept up for a number of days, nor should the patient be allowed to get up too early.

Recurrences, so frequently encountered, should be prevented by attention to the diet, moderate daily exercise, regular evacuations, and tonic measures to promote regular peristaltic action. Above all, the general health must be improved.

In a boy of five, who was under the care of an irregular practitioner, and who had improved and been frequently allowed to get up, a relapse occurred with fatal results. In another case, which I saw through the courtesy of Dr. N., the boy improved, and the parent, not understanding the necessity for rest for a few days longer, allowed the patient to get up and eat everything. Result, a relapse confining him to bed for some time longer.

Prognosis.—The disease is accompanied by a large mortality in the young. Grave complications may arise at any time, and the prognosis must be more guarded because of the greater danger of peritonitis. Willard Parker, quoted by Gerhardt, states that perforation and gangrene of the appendix are more frequent in children, abscess formation being more common in adults. The mortality, according to Whittaker, is as high as 70 per cent. in childhood.

Matterstock states that 44 per cent. die within the first seventy-two hours.

Treatment.—Sands, in his emphatic style, asserts that these diseases are surgical cases from their beginning, and that surgeons alone are competent to decide whether operations are expedient, and to perform them when necessary at the right time and in the proper manner.

Fagge, on the other hand, writes: "The course depends very largely upon the treatment which is adopted. . . . When the case is skilfully treated it scarcely terminates otherwise than in recovery. The essential points are that the patient should be kept perfectly at rest, that his diet should be strictly limited to slops, that he should not be allowed to take a single dose of aperient medicine, and that opium should be freely given." These are the extreme views—the one of the surgeon, the other of the physician. It is certainly true that a number with severe initial symptoms resolve and no further trouble is experienced. In others recurrences are met with at intervals, and subsequent attacks may result in abscess, rupture of prior adhesions, with purulent peritonitis and death.

Before an operation is indicated the principles of treatment, from the standpoint of the physician, are to avoid all sources of irritation from within and from without. The patient should be kept in bed, absolutely at rest, to insure rest to the inflamed parts; he should not be allowed to sit up for any purpose whatever. The flexed thighs may be supported by a pillow under the knees. Liquid diet only should be allowed; in cases of frequent vomiting rectal feeding or stimulation may be necessary. Opium or hypodermics of morphia in sufficient quantity to relieve pain. The cases have usually been thoroughly purged by the lay attendants without material benefit before the physician is called in, and enemata only should be employed to relieve the constipation after the first few days. No purgatives of any kind *should be* allowed before operation. The lesion is in the appendix, and but rarely in the cæcum; the latter, except in stercoraceous typhlitis, is usually empty. The increased secretion and peristaltic action might precipitate rupture or favor the escape of fæces into the peritoneal cavity. Dr. Habershon, quoted by Fagge, states that he has, at post-mortem examinations, seen castor oil floating on the contents of the abdominal cavity. It seems just as rational to resort to purgatives in injury of the intestines due to traumatism or pistol-shot wounds, etc., as it is to advise them in perforations of the appendix. The risks of early exploration in the hands of a careful antiseptic surgeon are less than the harm done by the *injudicious administration of cathartics* before operation. After the operation has been performed, Tait's plan of administering salines will act beneficially by preventing adhesion, carrying off the morbid products of inflammation, and lessening the engorgement.

Leeches have been applied at the outset of the disease with advantage. Belladonna and mercurial ointments have been advised. Cold applications of various kinds have been used and with benefit, particularly at the outset of the trouble. Hot applications are favored by others. External applications, of whatever kind, do not seem to make any material difference in the ultimate results. The œdema of the skin produced by the poultice may obscure the local evidence and make the diagnosis more difficult; on the other hand, warmth is more grateful to the patient generally. The feelings of the invalid form a valuable guide here; whatever affords most relief should be used. The meteorism is greatly relieved by the application of hot turpentine stupes. A long rectal tube, cautiously introduced, will at times favor the escape of large quantities of gas. Puncture of the intestines, in view of the paralytic condition of the walls, is attended with great danger.

Should the temperature become normal after a few days, and the local symptoms diminish, resolution is probable. Persistence of fever and swelling, debility, emaciation, sweating, and profound anæmia point to suppuration. Frequently the temperature will be low, even though the pus be present; this should not be forgotten.

Bull, in a recent article read before the Medical Society of London, says: "The general plan of surgical treatment should be as follows: The more rapid the development of the symptoms, the earlier should the surgeon interfere. In the presence of signs of spreading peritonitis, laparotomy should be performed at once, whether they were manifested immediately after the outset of the disease or in the course of milder symptoms. An exploration in cases of doubt would be preferable to waiting for further indications. When peritonitis remains strictly circumscribed the abscess should be opened by the end of the first week, or as soon as pus could be detected with the needle. But, even if no pus could be found in this way, an incision would be justifiable in the presence of such symptoms as were indicative of prolongation of the suppuration in the cellular tissue."

Bull prefers for laparotomy in these case a vertical or slightly oblique incision three or four inches in length, leading up from a point a finger's breadth or an inch above the middle of Poupart's ligament; and for incision of the abscess a cut starting from the same point, but directed either parallel to the ligament or approaching nearer the vertical, according to the situation of the induration. Gill Wylie prefers for a laparotomy, particularly when extensive peritonitis or adhesions are suspected, an incision in the linea alba, below the umbilicus. Sands advises the vertical incision over the caput coli.

The abscess should be approached by gradual and careful dissection layer by layer. The Hilton-Roser method is unsafe. When the cavity has been reached, thorough digital exploration should be practised, not only to discover the foreign body or concretion, but principally with a view to ascertian the direction and extent of the burrowing, so that the drainage-tubes may be inserted accordingly.

CONTAGIOUSNESS OF TUBERCULOSIS.

By William Porter, M.D., Chairman of a Committee appointed to report to the Mississipi Valley Medical Association at Evansville, Indiana, 1889.

A year ago, when I was appointed a member of the committee to report upon the Contagiousness of Tuberculosis, I fully expoected to be able to present to you a condensation of all the writings upon this subject to date.

Those of you who have noted the current medical literature for the last twelve months will agree that such a purpose could not be now carried out in the time to which our papers are wisely limited.

Moreover, I believe that a free discussion of this subject will profit more than the presenting of even the most exhaustive report; therefore I will not embarrass the former by attempting the latter.

The choice of the term "contagious" is not a happy one, and yet it has a conventional meaning well understood. I shall here use it as meaning transmissibility. The word "portagious" suggests a thought which should always be kept in mind in our care of phthisical cases, which is that tuberculosis is a disease that can be carried; that the specific elements are portable. This, if we were to hold to the exact use of scientific terms, is more accurately descriptive of that feature of tuberculosis under discussion than is the word "contagious." Let us to-day, however, employ these terms as expressing the same idea, and thus avoid confusion and misunderstanding.

The careful reader of to-day cannot but notice the almost entire unanimity of opinion as to the possibility of the contagiousness of tubercular disease, and it is not so much to argue this proposition as to speak of the manner of transmission that I will claim your attention.

In all experiments made to determine the transmissibility of tubercle, it is well to accept the presence of the "tubercle bacillus" as a definite proof of the existence of tubercle. As I have elsewhere said, I am not fully convinced that it is always the cause, or, as many able writers say, the only cause; but even this may some time be demonstrated. At present (and I think this will suffice for our purpose to-day) I believe that if the bacillus is not the cause of tuberculosis it is at least the result.

The causative relation of the bacillus to tuberculosis is not, however, our theme, and, lest we fall into profitless discussion by the wayside, permit me to return to the subject proper—the question of contagion.

At the outset we are met with the question: Can tuberculosis be directly inherited? or, to state it more plainly, can a new-born child have in its tissues bacilli transmitted direcctly from the father or mother?

We all admit that a child may inherit a particular conformation of chest, or a constitutional predisposition which may favor in after years the development of conditions favorable to tubercular invasion; but whether the fetus may be infected through the ovum or spermatozoa is doubtful, though such infection may probably be accomplished through the placental circulation.

Johns claims to have proved placental infection to exist in the cow, and Baumgarten, as well as some others, affirm that a child may be born with bacilli tuberculosis in its tissues, which may remain latent for years, or even during the life-time. Landouzy and Martin have caused tuberculosis by inoculating animals with the placenta of tuberculous patients.

There is considerable evidence, therefore, to show that tubercle may be directly inherited from the mother, but never from the father. And the great probability is that instances of direct inheritance of tubercle are very rare indeed.

One such instance, however, was in my own practice during the past year. A lady patient far advanced in pulmonary tuberculosis gave birth to a child which died in seven months with well-defined tubercular diseease.

Leaving the solution of the problem of direct inheritance of tubercle to the future, let me offer two propositions which I believe are susceptible of demonstration, and, if so, are of the greatest practical value in their relation to human life:

1. The products of tubercular disease my be carried from a diseased human subject to one apparently healthy, in whom, as the result of such transmission, all of the well-known processes of tuberculosis may follow. In such cases the respiratory tract is generally primarily affected.

2. Through the media of meat and milk tuberculosis may be transmitted from diseased animals to man. In these cases the alimentary tract is first invaded.

Other methods of transmission are recognized by leading investigators; but these two, being the most important, will fully occupy our time.

The proposition that tubercular products from a diseased individual may be engrafted upon and infect a non-tuberculous subject through the respiartory tract is not only of the greatest interest, but of first importance.

I need not refer to many of the numerous experiments that have been made upon animals to determine the possibility of acquiring tuberculosis through inhalation of air loaded with particles of diseased matter. The researches of Villemin and Chauveau, twenty years ago, were demonstrations of the fact that tubercle could be conveyed by inoculation. The objection made by Sanderson and Fox, that tubercular conditions could be produced by inoculation with non-tubercular material has, I think, been well answered by Martin, of Paris, who, from numerous experiments, concludes that, after inoculation with tubercular matter, general tuberculosis may be produced and the virus acquires increased potency when inoculations are made in series of animals of the same species. On the other hand, the inoculation of non-tuberculous matter may produce tubercles which, however, do not, when inoculated, give rise to general tuberculosis, and this virus, after several terms of the series, seems to lose the power of causing even a characteristic local inflammation.

If we accept as true the statement that tuberculosis may be conveyed by inoculation, we are prepared to receive the further statement that it may be transmitted by the inhalation of the products of the disease. There is ground for the belief that many of the instances of acute infectious diseases which have their gravest manifestations in the air-passages are cases of inoculation; in diphtheria, for instance, where the mucous membrane, denuded of its epithelium, becomes a suitable place for the reception and propagation of the specific germ, or in erysipelas of the upper air-passages, where probably a similar phenomenon takes place, and possibly in scarlet fever, and, as some European writers think, in cases of specific pneumonia.

What is the evidence to warrant us in concluding that tuberculosis may be contracted in this way?

1. The experiments upon animals by Tappeiner in 1883, who found seventeen tuberculous animals out of eighteen that had been made to inhale tuberculous sputa.

2. The results of Koch's trials, who found within twenty eight days tubercles in the lungs of guinea-pigs that had been made to inhale material from phthisical cavities.

The experiments conducted by Cadeac and Mullet showed that while the expired air from tubercular gave negative results, the inhalation of air which contained particles of dried sputa from the same patients produced tubercle in two out of twelve of the guinea-pigs employed.

Some experiments of my own (Portagiousness of Phthisis, *Journal American Medical Association*, March 1, 1888), which need not be given in detail, showed that where tuberculosis was produced in a guinea-pig by inoculation, it was possible to infect a previously healthy animal by causing it to inhale the air from a close box in which the diseased one was confined.

When we come to a practical study of tuberculosis in the human subject, the evidence of its transmissibility is, I think, conclusive. I need not here detain you by citing individual cases in proof of this assertion, for probably each of us will remember instances where, if there was not actual demonstration of the contagion of tuberculosis, there was at least circumstantial evidence strong enough to deeply impress us.

Aggregated investigations are always more valuable than isolated instances. We find that the Collective Investigation Committee of London received replies to inquiries from 261 physicians in active family practive, affirming the proposition that phthisis may be communicated from the sick to the well. In these answers many cases were related which seemed to leave little room for doubt.

In this country pathologists of the New York Board of Health have gone so far as to distribute published rules for the prevention of consumption, based upon the knowledge of its contagious nature.

At a meeting of the Paris Academy of Medicine M. Villemin read a report of the special committee appointed by the Congress for the study of tuberculosis last year, which it was proposed to publish, with the object of instructing the laity as to the nature of the disease, and the best means of avoiding contagion. The report calls attention to the fact that pulmonary phthisis is not the only form in which tuberculosis manifests itself, but that many cases of pleurisy, peritonitis, meningitis and bone and joint diseases are often tuberculous. The report insists upon the contagiousness of the disease, and refers to the various ways in which the bacillus may gain entrance into the body. Since the sputa of phthisical patients usually contain the bacilli in large numbers, special care should be paid to the immediate destruction of all expectorated matters.

In a paper by Dr. J. E. Squire, before a recent meeting of the London Epidemiological Society, the statement was boldly made that the discovery of the bacillus tuberculosis allows us to place phthisis in close relation to the class of infectious diseases, toward the control of which preventive medicine has already done so much.

Dr. Cornet, in an excellent paper read before the Berlin Medical Society, only voiced the opinion of many other writers when he said the chief danger of contracting phthisis by contagion lies in the dried sputum, which is often turned into respirable dust.

Dr. Lawrence Flick, in a paper read before the Pennsylvania

Medical Society last fall, says "contagious diseases are dependent upon a diseased germ and cannot be contracted except through the medium of that diseased germ. Every case is dependent upon some other case, and no case can spring up of itself." He then endeavors to show, by a careful topographical study of phthisis in the Fifth Ward of the city of Philadelphia for a period of twenty-five years, that consumption observes this law.

Few physicians are ready to accept such advanced views as these, and yet a careful study of Dr. Flick's essay will show good grounds for his assumption.

Objectors to the doctrine of the contagion of phthisis often quote the statistics of the Brompton Consumptive Hospital, which show the fact that the medical attendants and nurses at this famous institution have been singularly free from tuberculosis.

Instead of arguments against the probability of contagion, are not these facts, of which you are all aware, evidences of the value of prevention? Where could we find better hygienic conditions than in such a hospital? and it is to just such conditions that the advocates of contagion look for relief. If the fact that the resident physicians and nurses at the Brompton Hospital seldom become victims of tuberculosis is a proof of the non-contagiousness of the disease, then by the same process of reasoning can we prove that diphtheria, erysipelas, and even cholera, are not contagious.

A most interesting fact in keeping with the idea of the transmissibility of phthisis is that localities once famous for freedom from tubercular disease may in time acquire a doubtful reputation as health resorts for phthisical patients.

Dr. Benjamin Rush wrote that consumption was unknown among the North American Indians in the early history of the country, and very infrequent among the early settlers of New England. A hundred years ago the climate of New York was thought to be curative in cases which had acquired phthisis in the Old World. Afterward the level prairies of Illinois, and since then the mountains of Colorado and the salubrious atmosphere of Calfornia have been Eldorados of the victim of tuberculosis.

That there is much in the curative influence of climate I may believe; but the point I wish here to make in accord with the idea that tubercle is transmissible is, that a place or a people once free from the ravages of tuberculosis, may, by being brought into association with tuberculosis and by ignoring sanitary precautions, acquire conditions needful for the spread of the disease.

I wish to emphasize the idea that when a certain locality becomes famous as a resort for consumptives, the strictest care should be taken by those in authority to enforce all that is now known of sanitary and hygienic laws to prevent possible transmission of the products of the disease. Who has not seen muco-pus left by the victim of tuberculosis slowly drying on the grass or gravel in front of the summer hotel, needing only time and a gentle breeze to be wafted in broken doses, possibly even into the sleeping chamber of the unconscious and the unguarded. We vent our indignation upon the unlucky wight who drops the orange rind or banana peeling upon the sidewalk, but fail to notice him who, himself the victim of the dread disease, unconsciously or ignorantly places a greater danger in his neighbor's pathway.

The statement has been made by Flick and others that patients with phthisis have greater immunity from other contagious diseases. Dr. Welch says that, having seen upward of 5,000 cases of smallpox at the Philadelphia Municipal Hospital, he does not remember one who had well-marked phthisis. Dr. Longstreth, Pathologist to the Pennsylvania Hospital, in twenty years has never found consumption in an autopsy for typhoid fever.

Thus it appears that the study of tuberculosis as a contagious disease is each year presenting new and interesting conclusions, and certainly we have reason to hope that the line of investigation so largely directed by Koch's discovery may ere long bring about results which will be of greater practical advantage than any with which we are now familiar.

2. Having gone somewhat hurriedly over the grounds upon which are founded the theory of the transmission of tuberculosis from man to man, let us see what reason there is to believe that it can be carried from animals to man.

You are all familiar with the unanimous conclusions of the Congress on Tuberculosis, held last year in Paris, which was in support of the idea that tuberculosis is contagious, and that there is positive danger to the human race from the consumption of the milk and flesh of tuberculous animals. It was proven by numerous experiments that animals fed upon diseased meat were exceedingly liable to become tubercular, and then it was demonstrated by Carmil, who had made a special study of the subject ,that the tubercular bacillus, as found in such animals, may penetrate the unbroken mucous membrane of the respiratory and intestinal tracts.

M. Moule and also M. Cagny had observed that domestic fowls were often the subjects of tuberculosis, the disease being found first in the abdominal organs. This I believe to be a most timely warning against a danger next to that of bovine infection. Some of you may have seen the barn-yard fowl destined for early enrollment on the menu card picking over the debris from tuberculous patients who have been attracted by the well-known reputation of the place for good water, pure air, and the best of food. It is not pleasant to think of such things, but unless we think of them we cannot remedy them.

A learned paper by an honored member of this Association, Dr. J. A. Ouchterlony, was read before the Kentucky State Medical Society, in which he expressed his conviction that there could be no security from tuberculosis so long as tuberculous meat and milk are used. "The disease is contagious, infectious, and not congenital. It is transmissible, especially through the alimentary canal and respiratory tract. Rabbits kept near tuberculous patients contract the disease in twenty-seven days. Rabbits suspended in cages so as to breathe the air exhaled by tuberculous cattle contract tuberculosis. The lunas are the primary seat of the infection. It may be contracted through the integument, mucous membrane, abraded epidermis, wounded and abraded surfaces. Tuberculosis in dumb animals is identical with tuberculosis in man. Transmissibility to other species is very frequent."

In a recent paper on the Communicability of Tubercle through Cow's Milk, Dr. Louis Parkes, of the University College, London, says: "While not denying that the tubercular virus may find other means of reaching the digestive tract than through unboiled cow's milk, it appears to me that there are no sufficient safeguards in the management of town dairies to warrant us in assuming that milk from cows in an advanced stage of tuberculosis has no chance of being mixed with the milk of other healthy cows. In every dairy of any size there will probably be tubercular cows, some of them, perhaps, with tubercular deposits in the udders; and as it is the common custom with dairymen to mix together the milk yielded by different cows, it is not too much to assume that tubercle bacilli may be widely distributed in the milk supply of any town. It has been said that the tuberculosis of cattle is not the same disease as the tuberculosis of man, and that the absence of any proof of the human variety having ever been dependent upon ingestion or inoculation of the virus of the bovine variety tends to strengthen that belief. To this it may be replied that the bacilli of bovine tuberculosis are identical, according to all bacteriological methods at present known, with those found in tubercular formations in the organs of man, and that, although the disease presents anatomical differences in man and cattle, these differences may be explained as being due to differences of soil in the human and bovine tissues, the bacilli ingrafting themselves in those tissues which present conditions most favorable to their growth and development. Secondly, absence of proof may only mean want of observation or recorded data, and cannot be held to imply that at no future time will satisfactory evidence of the human disease upon a bovine source be brought to light."

If time did permit I would quote at length from the paper of Dr. Paul Paguin, presented at the Missouri State Medical Society last May. He asserts that "the milk of tuberculous cows, especially those having lesions in the mammary glands—a common thing in grave cases, by the way—has been found by Degive, Bouly and Nocard, of France, Bollinger, in Germany, Bang, in Sweden, Harsten, in Belgium, Lydtin, in Switzerland, Fleming, in England, and a few American pathologists, to be capable of producing tuberculosis. I myself have found extensive tuberculous lesions in the mammary glands of milch cows, and I have known of some cases of tuberculosis induced by bacilized milk."

The important question for us as physicians is, can the danger of transmission be averted? So far as our present knowledge goes we might answer, not entirely; but if there be value in the carefully formed conclusions made from the scientific work of the last decade, much may be done to limit the number of victims of tuberculosis. We may not all be ready to fully indorse the statements authorized by the New York Board of Health, that tuberculosis is a distinct disease, that it is not directly inherited, and that it is acquired by direct transmission of the tubercle bacillus from the sick to the healthy, usually by means of the dried and pulverized sputum floating as dust in the air. For myself, I am convinced that in this direction is the safest path, and as no harm can come from excessive care regarding food and sanitation, I am willing to advise such care, though it seems to be excessive.

From experiments made upon animals and observations upon the human species, it is plain that much of the danger of contracting tuberculosis lies in the inhalation of air loaded with tuberculous sputa. Surely the danger can, to a large extent, be met by insisting that tuberculous patients should, as far as possible, use a cuspidor in which is a solution of bichloride of mercury at least 1 to 1,000, for it has been demonstrated that the bacillus can live in solutions of less potency.

Cuspidors and cloths which are used to receive the expectorated material from diseased lungs should, as far as possible, be kept moist, and the bed-clothing thoroughly freed from all power of contamination. There is nothing which demands correction more than the uncleanly and unsafe practice which many follow who have care of consumptive patients, of placing newspapers on the floor by the bedside upon which the expectorated masses are gathered and dried for free distribution in the household.

The careful disinfection of the room which a tuberculous patient has occupied is a matter of detail not to be overlooked by the medical attendant.

So far as protecting the public against food containing tubercular products is concerned, it can only be accomplished by thorough inspection. It is certainly the duty of each physician who is himself satisfied that such danger exists to endeavor to impress the public mind with the importance of proper legislation upon this subject.

If we are convinced that tuberculosis is contagious, and will but work up to our convictions, it is possible that the first step will then be taken to place this much dreaded disease under the same treatment as is small-pox and the once all-destroying plague.

Although none of us may be willing to ignore the agency of individual tendency, physical formation, and other conditions as predisposing factors in the causation of tuberculosis, yet, as we get away from the idea of heredity and approach the more tangible view of transmission, the future is brighter with promise, and will, I have no doubt, be more abundant in practical results.—*Amer. Practitioner and News*,

EDITORIAL.

THE NORTH CAROLINA MEDICAL JOURNAL.

A MONTHLY JOURNAL OF MEDICINE AND SURGERY, PUBLISHED IN WILMINGTON, N. C.

THOMAS F. WOOD, M. D., Wilmington, N. C., } Editors.
GEO. GILLETT THOMAS, M. D., " }

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VISITING SPECIALISTS—THE BASHFUL, LAZY AND INDIFFERENT MEMBERS OF THE SOCIETY.

Besides the invited guests of distinction, who from year to year visit the Medical Society of North Carolina, there are a few specialists who come for purposes of professional business. These gentlemen are always welcome, and, indeed, sometimes get the lion's share of personal attention, because they are pleasant company, and versed in the subjects which interest most of us. This is all very well, but they go farther than this, and are rather importunate in getting on the programme for a paper, the moral of the dissertation being clearly that for all such ailments as described be sure and seek the skilful specialist.

The time has come now when the line should be drawn, and no paper should be admitted except such as have been officially invited by the Society.

The Medical Society of North Carolina was organized for the promotion of the profession of this State: its meetings are designed to bring the young and the old together, to interchange the knowledge, and, above all things, to encourage our own members to bring their scientific contributions, coming prepared to take personal part in debates. It is a matter of experience that some of our young men are too diffident to speak before distinguished men, some of whom were possibly their teachers, and so make no effort to bring of their learning to the general fund, and in the intervals of our meetings they are not studying and recording at the bedside and in their offices such observations as every educated physician is daily meeting with. There is therefore no proper scientific impulse given by the Society meetings to the non-participating member, and he drudges through the year to eventually fall into the hum-drum of making a living—fossilizing, in other words.

We are conscious of the fact that we have made rather too much of the argument we began with, but we simply reassert that no papers should be considered by the Society that are not specially invited, and that every proper means should be employed to induce the lazy and indifferent members to observe, record, digest their varied experiences, primarily for their own good, and also for the general good.

DIGITALIS holds its position as the most reliable heart tonic, notwithstanding the new addition to the list. Digitaliis in powder is more efficacious than the decoction. All the *digitalins*, amorphous and crystallized, are to be shunned as not at all identical, and exceedingly poisonous.—*Therapeutic Gazette*, Sept. 15.—(Paris correspondence from International Congress of Therapeutics.)

REVIEWS AND BOOK NOTICES.

CYCLOPÆDIA OF THE DISEASES OF CHILDREN, MEDICAL AND SURGICAL. Edited by John M. Keating, M.D. Philadelphia: J. B. Lippincott & Co.

Surely these are days of literary clover for medical editors. Our tables are burdened with sumptuous volumes on various topics, but none can be handsomer than the one before us. The book-maker's art has been expended liberally and successfully, delighting the eyes with clear type and paper, and so preparing the reviewer at once to write only with approbation.

This is the second volume of the Cyclopædia, and comprises 1066 pages, from the pens of authors of acknowledged ability.

Diseases of the Skin, Constitutional Diseases and Diseases of Nutrition, Diseases of the Respiratory Tract, Diseases of the Circulatory, Hæmatopoietic and Glandular Systems, and Diseases of the Mouth, Tongue and the Jaws are the grand divisions, and the subdivisions are numerous. It may be objected that too much stress is laid upon the diseases which are not strictly confined to children, that the descriptions of tuberculosis, asthma, hay-fever, pleurisy, might as well have been left to the general treatises on practice, but it will be seen by reading this work carefully that the addition of new facts on the subjects treated, and that it easily takes its place as a rival of the great work of Barthez and Rilliet, is reason enough that it should be complete in itself. Especially is this true in regard to the section on diseases of the skin.

The illustrations are abundant and some of them unique, as, for instance, the photograph of the Cretin girl "Sarah," and the rickety child, both diseases, fortunately, as regards our section, unknown or exceedingly rare.

This great work easily takes its position with the best American "Systems," "Cyclopædias" and "Hand-Books," and a medical library of any pretensions cannot afford to deny itself this rich acquisition.

ANNUAL OF THE UNIVERSAL MEDICAL SCIENCES, etc. By Charles E. Sajous, M.D., and Seventy Associate Editors. F. A. Davis, Philadelphia, 1889.

This second instalment of five volumes of Sajou's Annual for

1889 is fully equal to the set of 1888, and in many respects superior. It was doubted by many of the enthusiastic supporters of the first issue if such a work could be kept up to a standard so high—this issue answers in the affirmative. Many convenient additions and improvements have been made to simplify references—medical journals and volumes being numbered, and referred to by number in the text, with date of issue. Each volume has an index, quite complete in itself, the pagination being by alphabet for each special heading in the volume, and not continuously, which gives some advantages in ready reference. The index of the final volume is general, and divided into three columns, one column devoted to therapeutics.

No better criterion of the success of a volume can be obtained than the use which practical students make of it, and from every direction we hear of the great help which physicians have obtained in consulting its pages, one of them, particularly, who reads the best journals and supplies himself with the choicest current volumes, speaks of the perusal of "the Annual" as being equal to a post-graduate course.

Of the subjects considered no analysis could be made in a review suitable to our pages. While it would be impossible for all the subjects to be treated with uniform ability, there is a nearer approach to it than would seem likely to be obtained. We do not think we venture much when we say that perhaps there is no subject considered in these volumes which gives greater evidence of the substantial advance of medical knowledge than that of Tuberculosis, and none of the editors show more talent in presenting a judicial digest of the state of that knowledge than Dr. J. T. Whittaker. No doubt it will occur to other readers that some other subjects in which they are more interested will impress them with equal force.

The question of most of our readers will be, would you recommend the investment of $15 for "the Annual"? and we unhesitatingly say, Yes!

ESSENTIALS OF MATERIA MEDICA, THERAPEUTICS AND PRESCRIPTION WRITING, arranged in the form of questions and answers, prepared especially for students of medicine. By Henry Morris, M.D. Philadelphia: W. B. Saunders, 913 Walnut St. 1889.

This is a book of 250 pages, as the title indicates, prepared for the use of students. An examination shows that the author has included the more recent additions to materia medica, and is well up to the times in all that he describes. The question and answer plan will always take precedence with students, bringing out the essential desiderata as no other plan can: but for other purposes than refreshing for an examination, such books ought to be avoided by the student. The increase of Boards of Examiners in all the States will create a demand for this and other books of a similar character, and it will be well if they are all as good as this.

CONSTIPATION IN INFANTS.—A friend has called our attention to an infant whose mother has taken it the rounds of the Wilmington doctors, with little help, for its relief. The remarkable point was that this was the fourteenth child of the same woman who had died with constipation. Purgatives of the milder sort were tried, and then the more active ones, constipation being at last overcome by a decoction of cascara, senna and nux vomica.

A MEDICAL PRACTITIONER whose whole life is not that of a persevering student has no business in the profession. A man who knows nothing but what his curriculum enforces, and who makes haste to forget that as soon as it has obtained him his license to practice, can only bring discredit on the high-minded and cultivated men who spent their lives in making smooth the path he has unworthily trodden. If medicine is to hold its high position, and retain the respect in which it is justly held, the men who are coming forward for its emoluments and distinctions must be equipped with all the richer learning which is required to enable them to hold their own in the world which is daily becoming more highly cultured, and which will certainly demand more of its medical advisors. A mental outlook bounded by six-ounce bottles, and an intellect from which there is gradually fading the scanty lore gathered at the medical school with much pains and but partial comprehension, far too generally characterizes the middle-aged general practitioner of to-day. He of to-morrow will need to know more, and to know it in quite another way.—*Medical Age.*

CORRESPONDENCE.

SOME PRACTICAL POINTS ABOUT SUPRA-PUBIC CYSTOTOMY.

RICHMOND, VA., October 14, 1889.

Dr. W. W. Lane, Wilmington, N. C.:

DEAR DR. LANE:—I have received a copy of the NORTH CAROLINA MEDICAL JOURNAL containing your account of an operation for retention of urine in a case of enlarged prostate.

I congratulate you on the successful result obtained by your skill, under such difficulties. I hope you will never have to operate again without a rectal bag of some kind. When the rectum is well dilated it pushes the bladder out of the pelvis; forces it close to the anterior abdominal wall; gets the peritoneum well out of the way of the knife; makes the operation exceedingly simple and a safer one, too, than that of tapping the bladder with the trocar or aspirator. If you have no rectal bag, the bladder of a small pig will answer the purpose. The pig's bladder should be large enough to hold, when distended, 10 or 12 ounces of fluid. Into the neck of this bladder insert a short glass tube, or piece of pipe-stem, or very stiff quill, and tie the neck tightly over one end of the tube. Over the other end slip a piece of drainage-tube or soft gum catheter, and tie it tightly there. Or, better still, when a hog is killed, the bladder and a long portion of the urethra may be dissected out, dried and put away for use when needed. Properly prepared, this would make a first-rate rectal bag, not quite so elegant as are made by the instrument-maker, but answering every purpose.

When you have a case of retention of urine from an enlarged prostate, or stricture, and it is impossible to introduce the catheter there is no time to lose. The patient cannot be transferred to some practitioner of greater experience or facilities, and if the country practitioner (who can get a pig's bladder, a sharp pen-knife, and a tenaculum, made, if need be, out of the prong of a common iron table fork) can be made to realize how simple the operation of making a supra-pubic artificial urethra is, great suffering and many lives would be saved.

With thanks for the kind reference you make of me,

I am, sincerely, yours,

Hunter McGuire.

MEXICAN IDEAS OF THE CONTAGIOUSNESS OF CONSUMPTION—PREVALENCE OF SMALL-POX AND NEGLECT OF VACCINATION—GOITRE IN THE SIERRA MADRA.

Los Yeoras, Mexico, September 25, 1889.

Messrs. Editors North Carolina Medical Journal:

Dear Sirs :—I write to thank you for the June number of the North Carolina Medical Journal, which was received sometime ago, and also for the Bulletin of the State Board of Health, and Proceedings of the Sanitary Association, all of which I have read with a great deal of pleasure.

The article by Dr. Biggs on "The Principles of Treatment in Pulmonary Tuberculosis" particularly interested me. The Mexicans here, I was surprised to find (and am told that it is true in other parts of the country), have arrived at similar conclusions with regard to the transmission and predisposition of pulmonary tuberculosis, as set forth in the able paper by Dr. Biggs.

The first death that occurred in my practice here happened to be a case of pulmonary phthisis. Immediately after the body was removed for interment, sulphur was burned freely throughout the house, the walls were scraped and a fresh coat of whitewash applied· These precautions they use in no other diseases than yellow fever and phthisis. Of course, they are in utter darkness as regards Prof. Koch and the existence of the tubercle bacilli, the source of infection, etc., and could only have determined upon the infectiousness of pulmonary phthisis from observation.

It is a simple fact that, although they deny the hereditary transmission of pulmonary tuberculosis, they consider it a source of great mortification to have consumption or to be related to one affected with this disease. You may tell a man that he or his wife, or any of his family, has syphilis, and nothing is thought of it. He will simply inquire about the treatment, and does not care who knows of his trouble. But if the case is one of phthisis, he will request you to call it by another name and enjoin secrecy. The repugnance to anything pertaining to phthisis is as great here as in some parts of California, where, for instance, to call a man a scoundrel is a small matter, but to call him a *consumptive* scoundrel means a fight.

On coming into Mexico one cannot but be struck with the great number of pock-marked faces he encounters on every side. Variola in Mexico, as far as I can learn, is like their beggars—first in one part of the country and then in another, but always with them. The fact that the disease can be controlled and almost stamped out of existence, as is the case in her sister republic, the United States, seems just to have dawned upon the officials at the capital, and then only after a very severe epidemic of the confluent type occurred in their very midst.

They are now importing virus from the United States and from England, as their own supply is in no way adequate to the demand. Epidemics have occurred in several of our neighboring towns, and with a variable degree of severity. In a town of about 600 inhabitants, situated in an adjoining State, it is a fact that, when the epidemic was over, scarcely a child remained, while in other localities the disease was of a much milder type. The people cannot be made to realize the necessity of a quarantine or vaccination. They consider small-pox much as we do measles, and say that as they can have it but once they might as well have it over as soon as possible. But one case has occurred here during my four month's residence. Why it did not spread I cannot see, for the attempts at a quarantine utterly failed, and vaccination proved but little better.

In the city of Mexico they give twenty-five cents to every man who brings his children to be vaccinated. In our camp we rather reversed this order of things and imposed a fine of five dollars upon all who did not bring them, and in this way we vaccinated all the children who had not had the disease; but for some unknown reason with but indifferent success. Although we received the virus from the United States and from two different vaccine farms and repeated the operation several times on the same subjects, less than one-quarter of the number vaccinated have taken successfully, and even worse results occurred in the hands of two physicians of my acquaintance. Of the results obtained in the city of Mexico I have no knowledge. I do not think that so many failures can be due to errors in the technique of so simple an operation, for in my hospital course I had no little experience and some success in vaccination but is due rather to heat and moisture on the road. With a view to obtaining my own vaccine, I am collecting some technical information, and hope soon to commence a series of experments. If you could give me any information on the subject I should be extremely gratified. In this, locality, as, indeed, is the case throughout the whole range of the Sierra Madre Mountains, a very large percentage of the population are affected with goitre or simple bronchocele. It seems to be first noticeable in both sexes at puberty, and this grows quite rapidly sometimes, assuming enormous proportions and interfering very materially with respiration and deglutition. Foreigners, no matter how long they have been in the country, and their children born here are singularly exempt from this disease. As yet no remedy with which I am acquainted has been successful in the relief of this condition, I have used iodine as recommended in the text-books, but with no benefit. There are a considerable number of lepers, I am told, scattered through the country, and a few quite near to us. As yet I have seen none in Mexico, but shall take the first opportunity to visit them.

Yours, very sincerely,

GEORGE H. MALLETT.

A STRANGE EXPERIENCE WITH TAPE-WORM.

RINGWOOD, N. C., ——, —, 1889.

Messrs. Editors North Carolina Medical Journal:

DEAR SIRS:—About twelve months ago I was consulted by a drummer, a very particular friend of mine, who complained of intense itching around the anus, which was always worse soon after going to stool. After a few questions I diagnosed ascarides and directed him to inject into the rectum a weak solution of carbolic acid and to press his bowels open. I advised him to keep this up until he felt relieved. About a week or ten days after I received a letter stating that he had followed directions closely, and, to his very great surprise, one morning passed about ten feet of *tape-worm.* For a short while after this he was not bothered with the itching, and thought himself well. Very soon the symptoms returned, and as he informed me, he daily passed from 20 to 40 segments of tape-worm, and had regularly two evacuations daily. He wrote to me to know what to do, and I directed him to fast twenty-four hours and take the following on an empty stomach :

℞.—Fld. ex. male fern, ʒ iss.
Pulv. kanala, ʒ iss.
Mucilage acacia and simple syrup, q. s., ℥ iii.

And directed to take ½ at one dose and repeat in two or three hours and follow the last dose in two hours with a tablespoonful of castor oil. He reported afterwards that he passed at least 20 feet of tape-worm and searched for the head, but could not find it. All symptoms disappeared for several weeks, when they returned more aggravated than before. He was travelling out of the State and consulted several physicians, and would get relief, but no cure.

In April last he came to see me, stating that it troubled him a great deal, and unless he had two good actions a day he could see no peace. He looked unusually well, had lost no flesh, had a good appetite, somewhat irregular and abnormal, but not much, and said he had occasionally gripings in his abdomen, but not severe or protracted. But he stil passed large quantities of the tape-worm segments at evacuation. He remarked to me that if I knew anything that would remove that "durned old tape-worm" he was willing to try it, no matter how severe. But he said that medicine I had given him before was the meanest stuff he had ever tried to swallow, and, although he would swallow it, he did not think it would stay on his stomach, and that he vomited up one dose when he took it before, I told him I would do the best I could for him, and treated him as follows: Made him fast absolutely one day and night, having given him a dose of rhubarb and calomel to clear out the alimentary tract.

The second day, early in the morning, I gave him (♏. 10) chloroform in water, and repeated it in an hour. I then gave him oil male fern, ʒ i, *in capsules*, and pulv. kanala, ʒ ss., and followed with about half a glass of mucilage and water, in which I put about ♏. 15–20 oil turpentine. I gave the mucilaginous drink to dilute the male fern in his stomach so that he would not vomit—a thing he felt very much inclined to do. In two hours I gave oil male fern ♏. 45. I intended to give ʒ i., but he said he could not take the last capsule without vomiting, so I withheld it. Three hours afterwards I gave castor oil, ℥ ss. This was the afternoon of the second day, and he had only taken one glass of milk. About a couple of hours after this he went to stool, and, as he expressed it, "it seemed as if everything in me came out at once as soon as I took my seat." He called me at once and told me he thought we had gotten the old gentleman at last.

After careful examination I found four distinct tape-worms, the shortest 10 feet long, as I stretched them out and measured them. All four amounted to 50 feet, and then there were several short pieces I did not measure. On each piece, at the lower end, the segments were about as wide as your thumb-nail, and they got smaller and smaller as you approached the head, until they were no larger than a thread of knitting cotton. I did not succeed in finding a single head, and yet *I think* my patient thoroughly cured.

Two months have elapsed, and he is in perfect health, and has had not the slightest symptom to return, and felt himself cured.

Although I could not find the *heads* of any, I must have gotten them, or within a very short distance of them, and Flint states if they are broken off very near the head, it is very apt to die; this must have been the case, or else the head was in the fæces and I broke it off in my attempt to straighten it out, for they were all doubled up on the ground.

Reader, this tale of four tape-worms from one man at one time may seem marvelous to you, and especially so as they amount to 50 feet, but I can assure you it is equally marvelous to me. *I* could scarcely believe my own eyes, and my patient was disgusted to think he had carried 50 feet of worm around for twelve months. If you are a doubting Thomas, I can't blame you, but remember if Thomas had never belived, it would have been Christ who appeared to him all the same.

I have never heard of such a case before, but I am a young physician, and that may explain it, but perhaps my experience may in some way be of benefit to some of my young brothers in the profession. I am a graduate of the University of Maryland.

A. S. HARRISON, M.D.

CURRENT LITERATURE.

THE VALUE OF LAPAROTMY IN SUPPURATIVE PERITONITIS.

Dr. J. Cronyn, of Erie county, read a paper on this subject. Operative procedures in these cases, he said, had been much lauded within the last few years, and many cases had been reported where great success had resulted, and where it was reasonable to assume the issues would otherwise have been fatal. There were few natural proofs, however, in this relation, and he thought the case he had recorded would be interesting on that account. The child of Mr. F., of Buffalo, while jumping a rope, in some way had injured the walls of the audomen. There were no external evidences. The child complained of pain and suffered from tympanitic distension, vomiting and purging. In thirty-six hours afterward peritonitis was evident. The child, seven years old, was not very strong, and the history of the family and of the parents was certainly scrofulous or tubercular. The child was very pale, and the appearances indicated involvement of the omentum and abdominal veins. Day after day the acute symptoms diminished and diarrhœa had ceased, but the immense distension was most troublesome, rendering breathing exceedingly difficult. On the tenth day there was evident fluctuation. The treatment had been by large poultices and opium. It had been with difficulty that the poultices were borne and applied, as the little one's legs were drawn up. On the twelfth day the propriety of opening the abdomen was suggested to the family as the only way to save the childs life. The writer candidly admitted that he had not urged this very strongly, as he thought the patient likely to die upon the table. On the morning of the fourteenth day he had been afraid the little patient would not live through the day. In the evening he was summoned, the message telling him she was dying. On reaching the house he found to his surprise that nature had produced the surgical operation. The umbilicus had given way and a gallon of pus had been discharged. A bandage was applied, lactophosphate of calcium. bark, and so on, was ordered, and, to make a long story short, an excellent recovery was made, the patient enjoying better health than before the illness. Could there be plainer proof of the propriety of doing a laparotomy under such circumstances? Nature here had indicated what ought to be done by the surgeon's knife, and probably had done the work better.

Dr. Traux, of New York county, said that several cases of suppurative peritonistis had come under his observation in the Harlem Hospital. About six months ago a patient had been admitted to his ward. On examination, he had found the man had peritonitis, and was in a state of collapse. He was apparently a strong, vigorous young man, perhaps twenty years of age. He was too weak to give any history of his disease. Just at that time the visiting surgeon came to the hospital, and the speaker suggested laparotomy and washing out of the abdominal cavity; this was done under thorough antisepsis, but the man never recovered from the shock. A few days after, a young man had been admitted to the hospital with the same trouble and in the same condition; again the speaker advised laparotomy, and within an hour after her admission it was performed. Notwithstanding all possible care, she died. Some few weeks after, a man thirty years of age was admitted suffering from peritonitis; he had been sick for several days and was in a state of collapse. Laparotomy was advised. The abdomen was opened and the cavity washed out and the man seemed to revive, and for a few hours hopes were entertained that he would recover; but the next day, about twenty-four hours after the operation, he grew very weak, and, in spite of stimulants, died. This had been the speaker's experience. He admitted that they were all unfavorable cases of operation. He believed that many of these patients could be saved if permission could be obtained to operate when they were strong enough to stand the shock. He had during the last few years had a great many cases of peritonitis, and was bound to confess that uniformly they had turned out unfavorably. Comparatively few of the patients had recovered. He looked upon peritonitis now (meaning general peritonitis) as almost certain death. He had made autopsies in many cases, and found the abdomen filled with pus and in as deplorable a condition as could be well imagined.

A member suggested that Dr. Cronyn's case seemed more like a supra-peritoneal abscess.

The President said he thought it well settled that cases of supra peritoneal abscesses should be opened above Poupart's ligament.

Circumscribed abscesses, which had been common when he had begun practice, were now hardly known. He had cut down through the abdominal walls, found the sac, stitched it to the sides of the wound, and stuffed the cavity with oakum. In these cases of circumscribed abscesses the prognosis was favorable if large incisions were made, the cavity being well washed out and free drainage secured. The washing out of the abdominal cavity in cases of general peritonitis had failed in his own practice, and he would like to know what had been the experience of others in this respect. Replying to a question as to what formed tne intra-abdominal wall of these abscesses, he said he thought it was probably the matting together of the intestines.

Dr. T. H. Manley, of New York, said that he had never seen a patient recover whose peritonæum had been opened for general suppurative peritonitis. He had been consulted about one case. It had been decided not to let the patient die without giving him the benefit of so harmless an expedient. So he opened down in the direction of Poupart's ligament on the right side. Pus spurted out in large quantities, serous and grumous fluid, of which as much as a quart was removed. They had just commenced operations on the abdominal cavity when the child died on the table.

Dr. Cronyn said that the gentleman who had hinted that the case he had cited was perhaps only a supra-peritoneal abscess must imagine that he (Dr. Cronyn) did not know anything about surgery. He very rarely allowed himself to be led into expressions of opinion until he had well weighed the value of his premises. He explained that there had been evident fluctuations on the twelfth day, and this fluctuation had not been confined to two or three or four inches, but had involved the entire abdomen. As to the propriety of opening the abdominal cavity for peritonitis, he merely thought he would give an instance where nature had opened it.—*N. Y. Med. Journal.*

RELIEF OF STRANGURY.—Dr. Luton, of Rheims, having highly recommended tincture of ergot internally for the immediate relief of strangury, we were recently induced to try a hypodermic injection of ergotin for the same purpose, inserting it in the fossa just behind the great trochanter. The results were all that could be desired. The patient had had a hypodermic injection of morphine about an hour previously, and was considerably under its influence when we were applied to for relief.—*National Druggist.*

THE SURGICAL TREATMENT OF ERYSIPELAS IN CHILDREN.

To open the inflamed skin in erysipelas by means of numerous small incisions made all over the diseased surface, and deep enough to draw blood, has been practiced for sometime, and not without success, provided antiseptic lotions (5 per cent. solutions of carbolic acid, or sublimate, 1 to 2000) were frequently poured on the dressing. Hypodermatic injections of a 2 per cent. solution of carbolic acid into the healthy skin surrounding the inflamed part have also been in use with varying success. The object in both methods was to bring Fehleisen's coccus of erysipelas, wandering in and along the lymphatics, in direct contact with germicidal fluids. The idea was correct, but its execution deficient in both methods. The incisions in the inflamed cutis closed up too rapidly to admit sufficient antiseptic fluid into its lower layers, and the fluid, brought into the healthy skin bordering on the erysipelas by the hypodermatic needle, found its way too rapidly into the circulation, thus doing no good locally, but often harm constitutionally.

Kraske's method was the first step in the right direction. He made regular incisions on the border of the erysipelas, extending into the healthy skin, and, by crossing these diagonally with others, the incised surface (diseased and healthy) presented an appearance not unlike a rail fence. The object here was to give a good chance to the cocci to get to the surface, and the antiseptic fluid to get to the cocci in the lower layers of the skin, at the same time disinfecting the healthy ground most likely to be invaded next by these germs. To this end the dressing was constantly moistened for the next few days. The results of this method were excellent.

Kiedel and Lauenstein (*Deutsch. med. Woch.*, March 14, 1889) proposed to improve Kraske's method by locating this fence of incisions entirely in the healthy tissue, about one or two inches away from the border of the erysipelas. This was to avoid possible infection of yet aseptic tissue, and this modification has given better results than any other method as yet practiced. The patients were usually put under an anæsthetic, and the whole operation was performed strictly according to the rules of antiseptic surgery.

In three cases of genuine erysipelas in children I have been able to employ this method, and in each case with such success that I may be pardoned for relating them in detail :

Girl, five years old, in private practice. Child had an eruption (varicella); had scratched its legs, causing open sores, and in one of these on the left calf erysipelatous inflammation was set up, beginning with a severe chill and nausea, continuing with high temperature (104* to 105° F.) and other signs of severe illness, and spreading rapidly downward and upward. I saw the child eighteen hours after the chill, and, recognizing its cause immediately, proposed the Riedel-Kraske method. This was flatly refused, because of the anæsthetic. Next day I brought a new vaccination lancet with me, and proposed to make the bloody fence with the little harrow attached to it and without the anæsthetic. This was consented to. The erysipelas had meanwhile spread upward to about an inch above the knee and downward to the ankle-joint. I decided to make a fence only around the thigh. After carefully cleansing the whole thigh with soap, water, ether and a 5 per cent. solution of carbolic acid, and covering the erysipelatous region with a carbolized towel, I firmly grasped the leg, and with long strokes of the harrow managed to open the skin around the thigh to the width of about an inch, and about an inch and a half away from the erysipelas. The longitudinal scratches (which were all deep enough to draw blood) were carefully but quickly crossed diagonally with manifold strokes of the harrow, so as to be sure that all of the surface operated upon was opened. A solution of corrosive sublimate (1 to 2000) was then rubbed into the wound, and a layer of absorbent cotton applied and fastened with gauze bandages. This dressing was moistened freely with the same solution every fifteen minutes.

The whole operation lasted no more than two minutes. The child's temperature at the time was 105° F., it had vomited all food for two days, and had been awake and delirious most of the previous night. The "fence" was made at 11 p. m. I did not see the child until the next day, when I found it sitting up in bed smiling, with a temperature of 100–5° in the rectum, due to the erysipelatous infiltration remaining in the limb below the "fence." The erysipelas had evidently reached the wounded ring, for on the lower border of the dressing the skin disappeared under it in a red and swollen condition, with a number of blisters spread over it, while on the other side it was as white and cool as could be, and it remained so until seven days later, when I removed the dressing. The temperature never rose again, the appetite returned, the child had slept well, and the subsiding of the severe symptoms had set in about six hours after the little operation.

But I found another patient on that day also sick with the same complaint. The younger sister of the first patient, a very nervous, somewhat anæmic child, three years and a half of age, had been attaked the evening before with erysipelas of the right leg, beginning also at a scratch. As the parents consented immediately to the treatment, I was able to make the bloody ring just below the knee, and to thus stay the advance of the erysipelas in that direction. The temperature of the child fell from 104–5° to 101° F. within four hours, the erysipelas traveled down to the toe-nails, but never crossed our fence, the child meanwhile feeling perfectly well.

The third case was that of a baby but thirteen months old. I first saw the child at the children's department of the German Dispensary, on September 10th, when it was brought there for a severe attack of cholora-infantum. As it was collapsed, I washed out its stomach. This had the effect of checking the vomiting and of virtually curing the case. But two days later erysipelas began just above the knee, showing great tendency to spread rapidly upward, thus threatening the child's life. I resolved to operate the next day, in spite of the child's weak condition. When I did make the fence the child's condition appeared almost hopeless, the temperature registering 105–5° F., and the strength of the baby being almost exhausted. As the inflammation had spread anteriorly nearly to Poupart's ligament, I had to make the ring just below it, coming up from behind half way over the buttock. The mother being a Bohemian and quite unable to understand me, I had to make myself intelligible more by signs than by words, and yet our combined efforts resulted in a complete success, for the next day the baby's temperature was normal, and the child made a speedy recovery.

I had the satisfaction of being enabled to present the three children to my class at the New York Polyclinic, and there removed the dressings for the first time, showing exactly the line of demarkation and its remarkable action. I am positive that this method will check and cure every case of erysipelas if employed in time. My three cases demonstrate that my modification of operating with the vaccination-harrow and without an anæsthetic can be easily made use of in children, its advantage being that parents will more readily consent to this treatment.—*A. Siebert, M.D., in N. Y. Medical Journal.*

WASHING OUT THE ABDOMINAL CAVITY IN PERITONITIS.

In a case recorded in this issue of the JOURNAL the through drainage of the abdominal cavity is beautifully exemplified, holding out, in a practical way, encouragement in all cases of abdominal abscess or general peritonitis. A word of caution, though, is needed. Very few cases could be safely left as long as the one reported by Dr. Bellamy before operative interference is resorted to. It would be rare, indeed, to find another example of a spontaneous pointing for drainage in the perineum, however much such a fortunate symptom might be desired to simplify the ultimate proceedings. One or two cases recently occurring under the eye of the writer show that simply washing out the cavity through a canula, with carbolized water, and leaving the tube in for subsequent washings, is safe practice, and saved the life of a patient in imminent peril from general peritonitis.

In another case of perityphlitis, with general peritonitis, and perforation of the bowel, the sticthing of the bowel and thorough washing of the cavity discharged a lot of stercoraceous pus, and so far removed the existing evil that the patient in a few hours afterwards had an evacution of the bowels, the first time in many days, although he succumbed to the disease in less than twenty-four hours. Evidently laparotomy was delayed too long here, although the surgeons with rare good fortune opened the cavity immediately over the perforation.

It is safe practice in surgery to aspirate the abdomen in all cases where the symptoms point to accumulation of pus, the diagnosis completed, a laparotomy by antiseptic rule can be undertaken with as much confidence and promise of success, as formerly it was dangerous and unjustifiable. This branch of surgery deserves to be more generally cultivated, and the steps of such operations are now clearly enough defined to justify any well well-read physician in applying them, without necessarily having recourse to a specialist.

MEETING OF THE AMERICAN PUBLIC HEALTH ASSOCIATION IN BROOKLYN—SHADE TREES ON THE HEALTH—CLOTHING IN ITS RELATION TO HYGIENE—INFANT MORTALITY—THE QUARANTINE OF NEW YORK HARBOR—PREVENTION OF TUBERCULOSIS—HOAGLAND LABORATORY.

This is the first meeting of the A. P. H. A. in an eastern city for several years past, and it was a wise selection. Dr. J. H. Raymond, of Brooklyn, carried the invitation to the Association from Milwaukee, and from that day there was no doubt that his interest in the matter would move it on to a successful issue, which proved to be true.

The first day the meeting was rather thin, and it looked unpromising, but the next day it swelled to large numbers. It was plainly evident from the first that holding a meeting in Brooklyn was no assurance of engaging the interest of New York sanitarians; we saw no New York faces in the meeting, and saw on the list of new members only a few names.

The first literary contribution of the day was one on "The Overshading of Our Homes," from Dr. W. T. Parker, of Newport, R. I. There was some good basis for the idea advanced that overshading is generally unhealthful, but the discussion revealed the fact that no rule could be adopted, and no sweeping generalization be indulged in, in condemnation of shade-trees. There were climates, conditions of soil, and other combinations, which would enter into the consideration of the unhealthfulness of continuous dense shading. For the North and South, for instance, no rule could be applied which would answer both localities. The weight of the best thought seemed to be that each condition must be studied on its own merits. The subject was too large for the short time allotted to it, and should be more thoroughly studied.

Dr. James F. Hibbard's paper on "Clothing in Relation to Hygiene," was a well matured discussion, emphasizing what this writer has often believed, that people in cold climates dress too warmly, and keep their houses entirely too warm.

The opening paragraph of his paper gives the key to his observations:

"A number of years' observations as a general medical practitioner has led me to the conclusion that a large percentage of the people who have been the subjects of my observation dress too warmly, thereby perverting the normal functions of the skin, lessening its power of resisting the pathogenic influences of meteorological changes, and not infrequently being the initial link in the chain of morbid processes that lead to serious constitutional disturbances."

* * * * * * * *

"The qualities of appropriate clothing are chiefly that it should protect from radiant solar heat in summer without arresting the secreted heat from the body of the wearer or suppressing appropriate ventilation and in winter prevent the unnecessary loss of heat from the body by radiation, conduction or convection, without mischievous impediment to the circulation of the air about the skin, and without cutaneous irritation.

"Giving attention to winter clothing, we must bear in mind that it accomplishes our protection against low temperatures solely by preventing the too rapid waste of caloric, the product of our vital activities, and we must realize that the circulation of air under this protecting dress shall be sufficient to dilute and disperse the carbon dioxide and the organic waste secreted by the skin as the correlate of the lungs and the aqueous fluid normally secreted under the name of insensible perspiration."

* * * * * * * *

Dr. Hibbard has made the right use of his facts to arrest the attention of thinking people toward a reformation in clothing. No wonder that children are puny who are coddled in luxurious houses with a living temperature of 72 to 75 F. day and night, and when taken into the fresh air they are protected against it as though it were some harmful thing; better a North Carolina shanty with a big wood fire and the doors open.

The afternoon session was devoted to the discussion of infant mortality, founded upon papers by Dr. Jerome Walker—"The Causes and Prevention of Infant Mortality," and Mr. A. F. White's paper on "The Relation of the Dwellings of the Poor to Infant Mortality." The great problems involved in such questions as applicable to the larger cities, are exceedingly difficult, but it is apparent that much study is being done in this direction. In the course of discussion Dr. Maxwell, of St. Augustine, Fla., said that cholera-infantum was very uncommon in the South, and experience in practice in Delaware and Florida convinced him that it was not excesssive heat which was the great causative factor in this disease.

The Tuesday night reception at the Academy of Music was a grand affair. The reception addresses, by Dr. J. H. Raymond, Mayor Chapin and Dr. Hutchins, were in good spirit and were well in keeping with the aims and objects of the Association, breathing that hospitality which is seldom known to great cities. Dr. Hosmer A. Johnson, of Chicago, then delivered the presidential address. Dr. Johnson was a member of the National Board of Health, and has been more or less identified with public health movements. He was a fair presiding officer, but lacking experience in keeping such a large body at work strictly in proper channels.

The quarantine of New York harbor is one in which we people of the South Atlantic States have more interest than in that of New Orleans, and the Southern delegation was glad to get such an opportunity to visit it. Through the hospitality of citizens of Brooklyn we were enabled to enjoy an excursion on a large steamer, the Laura M. Starin. There was a very large party, but the boat was not overcrowded. An ample and tasteful collation was served during the sail, which we were allowed to enjoy leisurely, and according to the growing and healthy custom all over the country, it was characterized by the omission of liquors. Claret punch was served when called for, but few indulged.

The State of New York has appropriated large sums, at least, for its quarantine station. They are erecting large buildings for housing the sick and disinfecting bedding and clothing; but no adequate means are being prepared for putting a vessel in good cleanly and aseptic condition. A vessel prepared after the New York plan would not be allowed free protique in Charleston or Wilmington. Dr. Horlbeck, of Charleston, and Dr. Wilkinson, of New Orleans, were present at the inspection, and from the data they furnished we are satisfied that New Orleans and Charleston (which has recently adopted the outfit of the former city) have both far better quarantine than New York. It seems a little surprising that New York would go to such great expense with untried appliances, when she had before her well tested methods and machinery, suitable for a quarantine in the tropics, and of course equally so for one in the higher latitude of New York.

Thursday afternoon the Hoagland Laboratory was opened to the Association, and many members assembled there in advance of the meeting which was to be held in the lecture-room, to inspect the appliances. This building is the personal gift of a Brooklyn physician whose name it bears, and all its expenses are provided for by him. It is admirable in all of its appointments, and must serve as a great stimulus to the study of biology and pathology. It is a far better lighted building than the one devoted to similar purposes at the Johns Hopkins. Dr. Kemp, formerly of Johns Hopkins, is in charge, and Dr. Sternberg has also here his headquarters.

The all-absorbing question to all-the-world is the prevention of phthisis and the discussion of this subject was ample, and the topic has hardly yet reached its culminating point. Its practical bearings upon the management of the sick with consumption may lead to panic, but correctly instructed nurses and friends will find hope in the prospect of destroying the causative elements of the disease among the well persons of the household, and so be induced to take pains in destroying the sputa of the sick. This present writer recollects the smile which a report of his caused before the Durham meeting of the North Carolina Medical Society. His statement that he believed that fowls that had gobbled the sputa of a phthisical patient sickened and died, greatly emaciated, dying, he believed, with tuberculosis, was looked upon as a doubtful theory. Not five years have elapsed and the affirmative evidence of the transmission of tuberculosis from animals to men and conversely, is incontrovertible.

Many thanks do we owe to Dr. Raymond for his leadership in this great meeting, and we were delighted to know that he had been chosen Second Vice President. His election, though, was distinctly upon the ground of his good work as a sanitarian. The choice for President fell upon Dr. Henry B. Baker, of Lansing, Mich., the distinguished Secretary of the Michigan Board of Health, and we are sorry he was not present to have received the congratulations of his numerous friends. Charleston was selected as the place of the next meeting, and, as one cannot help having a good time in Charleston, we hope that Dr. Horlbeck will select some time in November, that we may have the prettiest weather possible for the occasion.

CURRENT NOTES.

CAFFEINE is not identical with theine, but isomeric.—*Constantine Paul.*

QUACK ADVERTISEMENTS IN RELIGIOUS NEWSPAPERS.—At the Centennial Geneal Assembly of the Presbyterian Church, held in Philadelphia, the Committee on Bills and Overtures recommended the adoption of a resolution that the General Assembly, while disclaiming responsibility for, or authority over, religious journals not published under its direction, disapproves of "all those advertisements of patent medicine, dishonest in form, fraudulent in substance, or prejudicial to the refinement, modesty, and purity of the home life."—*Memphis Medical Monthly.*

FLUSHING THE PERITONEUM.—This practice, so useful in abdominal surgery, has become widely spread over the Continent of Europe. M. Polaillon pointed out last year that the practice involves danger of shock, and described a fatal case, and two that nearly ended fatally. Some mention was made of M. Polaillon's experience in the *Journal*, a few months since, under the heading of the present paragraph. Dr. Pierre Delbet has published an interesting series of researches in the *Annales de Gynécologie* for September without, unfortunately, making the slightest mention of the surgeons who introduced the practice. From experiments on the dead subject and on dogs, he has come to several conclusions. The liquid employed for flushing is diffused over the whole of the peritoneal cavity. Foreign bodies cannot be entirely displaced by flushing; hence, although septic material may be dislodged till but little remains, that little may do harm; so on that account, in Dr. Delbet's opinion, it is best to flush with an antiseptic solution after plain water has been employed. After flushing, a considerable amount of liquid remains behind, occupying the pelvis, iliac fossæ and flanks. Dr. Delbet comes to a remarkable conclusion respecting the temperature of the water. The temperature, within the limits of 18° to 50° C. (64.4° to 122° F.), has appreciable effect on the respiration or circulation, therefore, there is no danger that flushing can arrest the heart's action. Dr. Delbet admits, however, that flushing with water of low temperatare chills the intestine, and, therefore, increases shock. The water should be heated to 38° to 39° C. (100.4° to 102.2° F.) Dr. Delbet does not entirely agree with M. Polaillon's explanation of the fatal case recorded by the latter observer. The carbolic acid or the anæsthetic may have had the principal share in the fatal result. The alleged hæmostatic action of flushing with very hot water appears doubtful to Dr. Delbet. During the first minutes of the flushing process a great quantity of the water is aborbed. When salt in the proportion of seven parts to one thousand of water is employed, the process becomes "a true indirect transfusion.' The paper concludes with the discussion of an interesting fact in relation to absorption of poisons. After flushing the peritoneum for ten minutes with the saline solution, a fluid containing a poisonous element may be diffused over the peritoneum with impunity, provided that it be followed by a third flushing with the saline water. In his experiments Dr. Delbet used sulphate of strychnine, but these researches are meant to imply that washings with relatively strong solutions of sublimate and carbolic acid may be advantageously used in flushing during an abdominal section, provided that the indicated precaution be not overlooked.—*British Medical Journal.*

TETANY AND A NEW THEORY OF ITS PATHOLOGY.—In this paper the author, Dr. John T. Carpenter, of Pottsville, Pa., said that tetany might best be defined as a nervous disorder, accompanied by spasms of an intermittent character, extending from the extremities to the muscles of the jaws. These spasms might, during the intermissions, be reproduced at will by compressing the affected parts, either in the direction of the principal nerve trunks or over their blood-vessels, thus impeding the circulation. But this definition failed to reach the underlying pathology of the disorder; indeed, later observers had taken the ground that there is no definite lesion connected with the disease. This might be true—no definite lesion, perhaps, but still a definite cause. Was tetany a special disease, or the sequel of precedent phenomena? Was it an independent morbid entity, or the consequence of some other diseased condition of the system? These questions might be answered by an analysis of the conditions and circumstances under which tetany had been observed, which had been many and varied. Diarrhœa had frequently been a condition; so also had constipation. The post-puerperal state and lactation in women had been frequently noted. But, again, children and adult males were also subjects of tetany. Typhoid fever and phthisis had furnished a number of cases. So had exudative disease of the pharynx. Could we make any generalization among all these varying conditions? Could we make clearly evident any fundamental peculiarity among all these different morbid states? He believed this could be done. Such a story had led him to the conclusion that the well-known general cocdition of systemic infection called sepsis might be safely asserted and surely proved to underlie or accompany every antecedent disease that had been observed to be connected with tetany. From these deductions might be formulated the axiom that tetany, as a general rule, follows upon such diseased conditions of the system as are observed to produce morbid discharges from mucous surfaces whose absorption is known to cause symptoms in remote parts of the body due to the circulation of septic poison. Taking first the post-puerperal state, modern obstetric physicians believed that sepsis was usual at this period, and to its influence they justly ascribed the so-called "milk-fever," the puerperal inflammations, and many other of the disorders of puerperal womon. If, then, a septic condition could exist sufficient to cause these disorders, it was not difficult to see that such might readily account for the appearance of tetany in the post-puerperal. He then went on to consider seriatim, in this connection, diarrhœa, constipotion and phhthisis, his summing up being that, in all recorded observations of morbid processes antecedent to tetany, a probable sepsis might be inferred; and no other cause, common to them all, has so far been discovered. To this fundamental peculiarity, therefore, must be assigned the causation of the final result, as a result consequent thereupon.—*N. Y. Medical Journal.*

THE JOHNS HOPKINS HOSPITAL BULLETIN will be issued monthly, to be known as the Hospital Bulletin. It will contain announcements of courses of lectures, programmes of clinical and pathological study, details of hospital and dispensary practice, abstracts of papers read and other proceedings of the Medical Society of the Hospital, reports of lectures, and all other matters of general interest in connection with the work of the Hospital. Nine numbers will be issued annually. The first number will appear in November, 1889. The subscription price will be one dollar per year. Subscriptions may be sent to The Publication Agency of the Johns Hopkins University, Baltimore, Md.

A Novel Vermifuge.—While the following advice seems to us as apt to kill the host as the guest, we quote it for the benefit of our readers from the *Journal of Pharmacy* for September: A whole cocoanut, grated fine, mixed with milk, and taken on an empty stomach on rising, is fully as reliable a tæniafuge as male fern, kousso, or pomegranate, etc.; it is far more agreeable to the taste. No after-treatment is necessary, as a single dose usually is all-sufficient.—*Maryland Medical Journal.*

Anæsthesia.—Dr. George T. Shrady, after a study of the subject of anæsthesia, has arrived at the following conclusions:

1. In commencing the administration of ether the gradual method is to be preferred.

2. Its employment allows the lungs to empty themselves of residual air, prevents coughing and struggling, and places the organs in the best possible condition to receive and rapidly utilize the ether vapor.

3. After the stage of primary anæsthesia is reached, the more pure ether vapor the patient breathes the better.

4. The shorter the time of anæsthesia, and the smaller the amount of ether used, the less likely are the unpleasant sequelæ to occur.

5. The more evenly it is administered the less shock to the patient

6. Anæsthesia should be entrusted to experienced administrators only.

7. Many of the fashionable efforts to resuscitate patients are not only useless, but harmful.

8. The minimum amount of force should be employed to restrain the muscular movements of the patient.

9. Mixed narcosis is often advisable for prolonged operations.

10. The utility of the galvanic battery, in threatened death, is yet to be proven.

11. The most trustworthy means of resuscitating desperate cases are artificial respiration, hypodermic stimulation, inhalation of nitrite of amyl, and inversion of the body.—*Brooklyn Medical Journal.*

C. N. D. Jones. M.D., surgeon Woman's Hospital, 21 Fleet place, Brooklyn, N. Y., writes: "I used Lactated Food with excellent results on a patient with very irritable stomach."

NORTH CAROLINA MEDICAL JOURNAL.

THOMAS F. WOOD, M. D.,
GEO. GILLETT THOMAS, M. D., } **Editors.**

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ORIGINAL COMMUNICATIONS.

CLINICAL LECTURE AT THE CITY HOSPITAL—AMPUTATIONS FROM A PATHOLOGICAL AND MEDICO-LEGAL STANDPOINT.

By Prof. Middleton Michel, M.D., Charleston, S. C. (Reported by Dr. R. P. Izlar, House Surgeon.)

The many operations you have witnessed during the past four weeks have all been the results of railroad, street-car and phosphate-work accidents.

Circumstances associated with some of these occurrences, and more particularly the unwillingness expressed by one of these patients to submit to the removal of the limb when the operation was at first proposed, suggest to my mind the propriety of dwelling this morning upon certain general considerations respecting amputations from both a pathological and medico-legal standpoint.

Without any studied connection, however, in the presentation of my desultory and unpremeditated reflections, I would wish at the very onset to accentuate a fact accepted by all true surgeons, which I hope may be a safeguard to the young aspirant who so soon catches the praiseworthy enthusiasm of glorious renown, and resolves, catlin in hand, to cut his way fearlessly into public notoriety.

Now, this fact is that an amputation is the most uncommendable of surgical performances, for it exhibits the impotency, not the power, of our art. To mutilate a limb, destroy its function and entail a permanent deformity, should be the last resort of the surgeon who barters away the entire part only to save life. It is conservative, not demolitionary surgery, that constitutes the highest expression of our skill. On this line of duty, with something more than customary reliance upon the *vis medicatrix naturæ*, there are some of us, perhaps, who can congratulate our patients as we can ourselves on the preservation and usefulness of limbs which had been unconditionally condemned and adjudged to be sacrificed.

In the presence, therefore, of the terrible injuries brought recently before you, involving sometimes both limbs, you can readily imagine the surgeon's anxiety, who feels the responsibility of his duty, and upon whose wisdom, knowledge, judgment, not to speak of humanity, so much depends.

Now, pretermitting all references to the various diseases necessitating amputations, and in view only of such mechanical accidents as require immediate surgical interference, two questions arise that we may profitably discuss :

1. When is it justifiable to amputate a limb?
2. What conditions determine the point of election?

The irreparable condition of a part or limb mangled by machinery, such as you have several times witnessed, permits of no variance of opinion between surgeon and patient and relatives as to the necessity of an immediate amputation, but such is not always the case On the contrary, it may sometimes happen that no easily recognized injury has been sustained and the patient suffers so little pain, that he and his friends protest at once against the preposterousnes of any operation at all. You doubtless recall the case of the little negro Fletcher—a railroad accident—whose leg presented just such a natural appearance; there was not a contusion, not even an abrasion, no bone was fractured; save partial immobility and insensitiveness of all parts below the knee, a considerable distension of the calf of the legs, but, above all, an icy coldness of the entire limb;

there was nothing to the eye of the uninitiated to justify an operation of this magnitude. I called attention, however, to the irreparable injury that some large artery—the posterior tibial or peroneal—had doubtless sustained, to the possible destruction of deeper-seated structures and to the inordinate quantity of blood pent-up in the part, all of which have already, but a few hours since the accident, brought about apparently an incipient gangrene of the limb. In less than a few more hours those interested in the child realized the importance of the operation, and the dissection of the leg revealed the accuracy of the diagnosis.

The decision of this first question is not always readily arrived at. The surgeon should pass in review the condition of each component structure of the limb, the extent and kind of injury it has sustained, balance this with the recuperative power exhibited by the patient for the work of repair, and estimate the probable time which this process will involve.

Let me here say that no amount of laceration of the soft parts alone, unless they be so violently contused as to unavoidably sphacelate, warrants an amputation, particularly if they promise to partly unite on being brought together and to lessen the granulating area. The muscles may be lacerated and cut to the very bone, and unless pulpified and in shreds, however ghastly the wound, if their edges be pared and placed in apposition, they may unite by fibrous tissue, though new muscular tissue will never be reformed. Again, the bones may be fractured, even comminuted by shot or shell, and experience has shown me that if the fragments are still covered by periosteum, perhaps held together in part, these fragments placed in axial relation to the limb will in time unite with little displacement, undisturbed by muscles themselves undergoing repair. But above all things in importance, we should look to the vessels and nerves of the part, for where these are compromitted in the injury, the limb will most likely have to be sacrificed, as the very channels of nutritive support and repair have been irreparably destroyed. Now, after all these considerations, should a doubt exist in your mind as to wholly condemning the limb, then give the benefit of the doubt to the patient by advising with some colleague of equal experience, who may vindicate your decision; and even then, under no circumstances perform the operation until you have the satisfied consent of patient and friends, for reasons to be presently stated.

With regard to the point of election for the operation in such cases as we are considering, it should be borne in mind as a cardinal principle *not to cut too near to injured parts.* However correct and important the rule: farther from the body the safer the amputation, yet in cutting near the mangled part we enter a region of more or less contused tissues, ill adapted to form proper flaps, as they will surely slough, leave tissue and bones exposed, and force a resort to another operation to remedy the errors of the first. Witness the case of S. P. in Ward C., upon whose foot a Chopart was performed so nearthe damaged tissues in January last, that soon after entering the hospital a Syme's was again performed in hope of saving as much of the foot as possible, when sloughing again takes place followed by exposure of both bones of the leg. On assuming my term of service I find this patient requiring an amputation at the lower third, which should have been the primary procedure, for it would have healed at once in so healthy a patient as he has proved to be, and he would have been discharged cured in three weeks, whereas he has been nearly nine months in this hospital.

My own practice has always been to select a point which is reasonably above suspicion, even if a little more should be thus sacrificed than might otherwise have actually proved successful, for it is difficult sometimes to judge to what exact extent the tissues have suffered. This was illustrated in one of my Lenoir operations quite above the injured foot; you remember a projecting tendon seemed to require trimming, and as I seized it, to our astonishment, the peroneus longus was drawn out of the leg; the force which shattered the foot had turned this muscle from its high attachment to the fibula; this occurrence did not interfere, however, with the prompt healing of the wound, and is mentioned only to show at what a remote distance above the injury other parts may be sometimes implicated. I do not mean to imply that you should not amputate as far from the body as practicable, for, in some of these regions, you have the well devised methods of Lenoir, Guyon, Roux, Pirogoff, Syme and others, and statistics show better and less fatal results than at the upper third of leg; even at the lower third the mortality is about one in seven, which is nearly one-half of what used to be met with at the upper third. You must remember, however, that at ankle-joint the operation is three per cent. more liable to be followed by reämputation.

Now, my endeavor has been to show you that an amputation is a discreditable operation at best, and the last resort of surgery; but it is also a very fatal one when associated with shock; statistics show that, taken collectively, one-half die; the mortality is less when the operation is done for disease.

From what has been said we should draw the inference that, all things being equal, the hospital presents the fewest operations of this kind, and the lowest mortality among these does the best surgical work. In this connection, we may congratulate ourselves without any imputation of personal pretensions, in presenting the year's statistics ending on the 1st of October, as the work in this hospital is the joint labor of my colleagues of the Faculty and of myself. It appears from the year's resumé which one of you have furnished me, that there have been but 36 amputations in all, including both upper and lower extremities, with only 8 deaths, which is little more than 20 per cent. This success is due, in a great measure, to the fact that most of these have been primary, and not secondary, operations.

Finally, there is another phase of this subject which should be referred to, since in the syncretism of the two great professions—Medicine and Law—we find it scarcely anywhere considered. I allude to the medico-legal subject of Malpractice.

Amputations performed for injuries sustained in the service of, or in connection with, public corporations, such as railroads and phosphate works, etc., are the class of cases, of all others, that are most likely to become the subject of litigation, and are carried into the courts for adjudication. It is then, in a suit for damages, that the surgeon may have to defend his treatment in an action for malpractice, have the mortification to listen dismayed to the malevolent criticism of those who think proper to sit in judgment upon him. Did time permit I could recount many illustrations of this, for there unhappily exists a painful record upon the docket of cases in which action has been brought against the physician to mulct him for damages upon the charge of want of proper skill, or even for errors of judgment, as, for example, in not having amputated high enough when another operation had to be performed, though no ignorance nor unskillfulness was charged. It is well to learn, also, that nine times in ten these malpractice suits relate to amputations, dislocations and fractures, with damages assessed at $2,025, as in the case of Howard vs. Grover, and but recently again at $8,000 in the famous Graves case in California, which at the first trial resulted in a verdict against the defendant, though a third trial ended in the acquital of Dr. Graves through the able defense of H. McAllister, Esq., and E. R. Taylor, himself a graduate of medicine, who has chosen the law as his profession. To their untiring work the defendant, gladdened by the approval of friends, received ultimately the encouraging congratulations of the medical profession generally.

For these reasons I urge you once more: Never perform the operation until you have the satisfied consent of those concerned.

Exercise the severest judgment as to the absolute necessity for such interference.

Exhibit the utmost practical skill in its performance, or else do not undertake it.

Finally, be sure that you adopt the most approved method of those abreast with the times and aptly fitted to counsel and decide in such matters.

A CASE OF PURULENT PERITONITIS—RECOVERY FOLLOWING CONSERVATIVE TREATMENT.

By R. D. Jewett, M.D., Wilmington, N. C.

On September 13th, 1889, was called in to see Henry McN., a negro boy about seventeen years old. The following is his previous history, as far as could be learned:

On the 26th of August, eighteen days prior to my being called in, the boy went on an excursion to Goldsboro. While on the cars he was attacked by a severe chill, followed by high fever. On reaching home he sought his bed. There were two large kernels in his right groin, with some pain in the same region. He was told by some of his friends to "mark" them with charcoal and spirits of turpentine, which he did with the satisfaction of having the kernels disappear. He had received no injury while on his trip—no blow, fall or jar of any kind. After five or six days* of fever and pain, he noticed a swelling beginning to appear just below the umbilicus, and called in one of the colored brethren. The doctor prescribed, and told him that he had "broken his apron string." He promised to return, but had not yet put in an appearance.

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*He was not positive as to the length of time from the commencement of his sickness till he first noticed the swelling.

For a week the patient's bowels remained bound up, and were then moved by a dose of salts. After this relief they remained quiet for eight days, when they responded to a dose of pills. During all this time the boy had been suffering intense pain; so much so that he disturbed the neighbors with his screams. He had no chills after the one he had on the train, but had fever all the time.

When I first saw the patient he was groaning and writhing with pain. On examining his abdomen found an elongated tumor, which was quite firm and extended from the umbilicus to the symphysis, and occupying about the middle third of the abdomen. Near the upper end of the tumor there was a spot about an inch and a half in diameter that had a fluctuating feel. On percussion the note was almost flat, the slightest tap giving rise to the most exquisite pain. However, steady pressure, gradually increased, was well borne, the patient only complaining that it "felt sore."

What was the nature of the tumor, which, as before stated, the boy said began to form just below the navel and gradually increased till it reached the symphysis? His bowels had moved freely a day or two previous, and the tumor had not been changed by the copious action. On either side of the tumor the belly was soft and free from pain. I had him to empty his bladder in my presence, which he did with no inconvenience, passing about eight ounces of urine of normal appearance. Having seen an exploratory laparotomy performed a few days previous on a man whose belly presented a somewhat similar external appearance, I believed the condition of this case to be the same as was found at that operation, viz: that there had been a general peritonitis with extensive adhesions, and that the bowels had been drawn into a knot where the abdominal walls offered the least resistance.

A very gloomy prognosis was given the boy's relatives, the only hope being based on the fact that he had stood the ordeal for nearly three weeks, and was still alive, and, notwithstanding his pain and a temperature of 102 2 F., able to consume his quota of the daily rations. Sulphate of magnesium and morphia granules (¼ gr. p. r. n.) were ordered.

The next day, in consultation with Dr. Thomas F. Wood, it was decided not to perform a laparotomy, the one above alluded to and its termination (the patient died the next morning) being still fresh in our minds. A hypodermic needle was inserted into the fluctuating area with a negative result; it may have been on account of the small size of the needle.

The patient remained in this condition about ten days, being kept comfortable by the morphia, and his bowels kept open by the salts, when he complained that his urine was very thick and gave rise to great pain in micturition. After a great deal of persuasion on my part and suffering on his, he passed a small amount of urine heavily loaded with pus. I concluded that pus had formed in the peritoneal cavity and was escaping through the bladder. I asked Dr. Wood to see the case again, and the next morning the hypodermic needle introduced into the fluctuating spot just below the umbilicus brought out a syringeful of pus. A teaspoonful of chloroform anæsthetized the patient sufficiently to permit the introduction of a straight trocar and cannula, when about an ounce and a half of pus was removed and the cavity washed out with hot carbolized water.

The next morning the temperature, which up to this time had been ranging from normal to 102°, was normal, and urine much clearer. An alkaline diuretic was given to increase the bulk of urine, and the pus sac was washed out twice daily with hot carbolized water. I say "pus sac," for it appeared to be only a small area where the presence of the pus prevented the adhesions which seemed to be present everywhere else.

After four or five days washing through a small gum-elastic catheter which had replaced the cannula, the water returned clear and the opening was covered by a pad of antiseptic gauze and left to heal. The tumor had changed its shape somewhat by this time, being now pyramidal, its apex at the umbilicus and its base extending entirely across the lower part of the belly. It was almost free from pain, was doughy, and could be indented by firm pressure. Ordered fluid extract of cascara as a laxative, and visited patient only once or twice a week.

On the 14th of October was met by the boy's aunt, who informed me that "that place has bustid agin," and on seeing him found pus again discharging from the cannula opening. I thought I might hasten the removal of the pyogenic material by the use of the peroxide of hydrogen, and to that end washed out the sac with a 25 p. c. solution, followed by the hot carbolized water. Although the discharge of pus was quite considerable, three washings with the peroxide was sufficient, for two days after this application the absorbent cotton which covered the opening was not stained in the least, nor could any discharge be caused by pressure. The wound was again left to heal, and the patient has not been seen since; but on inquiry as to his condition on November 2d, was told that he was pretty well and had gone to work on the Sound (sea-coast), eight miles from town. The doughy condition of his belly remains.

This case shows with what tenacity the negro clings to life, even under the most adverse conditions. It also shows what desperate efforts nature makes to overcome disease. This boy's trouble doubtless began in a typhlitis, so common now-a-days, or rather, probably, so frequently recognized as such. For three weeks, nearly, he lay there suffering the excruciating agony that an acute peritonitis must bring with it—suffering which would almost surely have consumed many times over the strength of the ordinary white man—without even losing his appetite.

For three weeks the case received absolutely no treatment, and that during the fourth was merely palliative. It was certainly not intended as curative, for the condition was considered as having gotten beyond relief. Then it was that nature performed her operation for getting rid of the pus, and she would probably have succeeded and effected a cure (even if at the cost of much time, suffering and a chronic cystitis) had she not been interrupted by the more comfortable and speedy process described in the body of this article.

THE IMPORTANCE OF EXAMINING THE EARS IN TROUBLESOME COUGHS.

By ALFRED C. PALMER, Senior Surgeon Norfolk Eye, Ear and Throat Clinic.

(Read before the Medical Society of the State of North Carolina, at Elizabeth City, April 16, 1889.)

It is a thing so common to the majority of us that we do not stop to question why that, in cleansing our ears with feathers, bits of cotton on tooth-picks and the like, we feel a peculiar tickling in the larynx and an irresistible desire to cough. If we consider for a moment, we must come to the conclusion that when this sensation is produced there must exist some direct nervous communication between the two organs, and if you will bear in mind a few anatomical facts, to which I beg leave to refer you, you will see that there does exist this communication and in a most direct manner.

You are aware that the eighth pair of cranial nerves consists of three, viz: glosso-pharyngeal, pneumogastric and spinal accessory, and it is to a portion of the two first mentioned that I will briefly call attention.

The glosso-pharyngeal, grossly-speaking, arises by three or four filaments, closely connected together, from the upper part of the medulla oblongata immediately behind the olivary body. It passes outward across the flocculus and leaves the skull at the central part of the jugular foramen in front of the pneumogastric and spinal accessory. In passes through the jugular foramen the nerve presents in succession two gangliform enlargements, the jugular, the superior, and the petrous, the inferior and larger of two, involving the whole of the fibres of the nerve and forming its filamentary connections with other nerves at the base of the skull. The most important of these connections to us in tracing this communication is the one with the pneumogastric, to which we will call your attention later on. From the superior part of this, petrous ganglion, or ganglion of Anderson, you will find given off a small but important branch, which, in ascending, passes through a small bony canal in the petrous portion of the temporal bone in its lower surface, finding its way to the tympanic cavity through an aperture in its floor. This is known as the tympanic branch, or Jacobson's nerve; here it divides into three branches, forming the tympanic plexus, and one of its branches is disturbed through the mucous membrane of the tympanum and Eustachian tube.

Without finding it necessary to dilate upon the origin and intercranial portion of the pneumogastric you will remember it leaves the skull at the jugular foramen immediately behind the glosso-pharyngeal. A short distance lower and we come to an enlargement, which is the superior ganglion, and upon its superior surface what do we find? The important connection with the petrous ganglion of the glosso-pharyngeal by filaments given off and entering the petrous ganglion of the glosso-pharyngeal inferiorly, at a point about opposite to where the tympanic is given off superiorly. The connection is not universal, hence the absence of the influence in some cases. By following the course of the pneumogastric still further downwards we are brought in contact with the inferior ganglion, from the middle of which is given off the superior laryngeal, whose course and functions now claim our attention.

It descends by the side of the pharynx behind the internal carotid where it divides into two branches, the external and internal laryngeal, the internal passing through the opening in the thyrohyoid membrane, entering the larynx, supplying the mucous membrane, and is the nerve of sensation of that organ. Thus, since anatomically we have traced a direct connection between these two organs, the tympanum and larynx, first through Jacobson's nerve to the petrous ganglion of the glosso-pharyngeal through this and its connecting fibres where they exist, into the pneumogastric and its branch, the superior laryngeal, to the whole of the mucous membrane of the superior part of the larynx, it is reasonable to suppose that, should irritating influences exist in the tympanum, there must necessarily be some manifestation at the other end of the connection. This influence might not be evident were it not true that the superior laryngeal terminates in so sensitive a membrane, made so by its own presence; hence I make the statement that many of those troublesome, hacking coughs which we are so prone to attribute to reflex stomach troubles (dyspeptic coughs), sub-acute laryngitis, bad colds and the like, are directly due to a disturbance of one kind or another in the ears, and that when these cases come under our observation we will often reach a satisfactory diagnosis and treatment by making a thorough examination of these organs.

My attention was first called to this subject about two years ago by the following case brought to me by the late Dr. Wm. Selden, of Norfolk, Va.

Mr. ——, age 45 years, had suffered for some months from an almost continuous cough. With little or no expectoration, had sought medical advice and treatment in various quarters, resulting in no relief. With the aid of Dr. Selden a thorough examination of the chest was made, with only the detection of a slight mitral regurgitation, which the patient stated had been set down as the cause of all of his disturbances by one of the physicians whom he had consulted. Upon making the laryngoscopic examination I found what I took to be a sub-acute laryngitis. The whole of the superior region was congested, but I was somewhat surprised to find the secretions about normal. I made the usual astringent applications, and directed him to return in two days. These applications were repeated for several consecutive visits, followed by no improvement, when I, by chance, questioned him regarding his ears. He replied that his right gave him some discomfort. I introduced a speculum and found a much inflamed drum membrane. I found, also, a slight accumulation which somewhat obstructed my view, and to remove this I introduced a small wire probang tipped with a piece of absorbent cotton. Immediately my patient was thrown into a spasm of violent coughing. Upon regaining his speech, I asked him if I had produced, when I introduced the cotton, a like tickling sensation to that which had always preceded his attacks of coughing, and he answered in the affirmative. I then proceeded to introduce the probang with the greatest care, but my efforts were useless. I might approach the drum-head ever so lightly and with the merest fibre of cotton, and the same result would follow. After further questioning, I found that everything calculated to produce an impression, suddenly, upon the tympanum, such as sudden change from hot to cold, loud noises, and the like, would be followed almost immediately by one of those violent paroxysms. I at once discarded all treatment directed to the larynx and turned my attention to the tympanitis. I ordered application of heat, both by warm water syringing and hop poultices, externally, as hot as could be borne, alternated by blisters behind the angle of the inferior maxillary. I was pleased to note the happy result which terminated in entire relief to the patient.

I have now under care two cases of eczema of the external canal with the inflammation extending down to the drum-membrane and slightly involving it. In each of these there exists a more or less disagreeable cough which has been of such disturbance to one patient that he has sought medical counsel on several occasions for imaginary lung trouble.

Corner Granberry and Freemason Sts., Norfolk, Va.

REPORT OF THE CHAIRMAN OF SECTION OF FORENSIC MEDICINE.

By J. T. Nicholson, M.D., Bath, N. C.

(Read before the Medieal Society of the State of North Carolina, at Elizabeth City, April 16, 1889.)

Mr. President and Gentlemen of the Medical Society of the State of North Carolina:

It was only through the strong persuasion of the conviction of duty that caused me to accept the position as Chairman of Section of this highly important, though much neglected branch of science. And we find under the head of Forensic Medicine the subject of my remarks, namely:

DIPSOMANIA.

It is of very recent date that this subject has received much notice from either the legal or medical profession. If a man committed a crime during a paroxysm of dipsomania, he was taken up and dealt with according to law as regards drunkenness, and as law holds drunkenness to be no excuse for crime, I fear many poor dipsomaniacs have had to pay the penalty of death for drunkenness, while medical science says the disease of dipsomania is not drunkenness, drunkenness being only one of many symptoms of the disease. And when science declares authoritatively that dipsomania is a disease while it is yet a question with law, I think that law ought to respect and accept the teachings of science. It has been proven that the irresistable craving is beyond the control of the patient. He cannot help it. It is beyond his power. It assumes the proportions of mania. And Dr. Hutcheson says that "this sort of mania differs entirely from drunkenness. The diagnostic sign of the disease being an irresistable propensity to swallow stimulants in an enormous dose whenever and wherever they can be obtained." Still this is not an infallible sign, for I have seen men "never refuse" to take it in enormous doses that were not dipsomaniacs, and I have a dipsomaniac residing within the limits of my professional borders who, just prior and during a paroxysm of dipsomania, is satisfied with "even four fingers," provided it is not too long between drinks. Of course a distinction must be made between the self-controlling vice of drunkenness and the irresistable impulse of the disease. When the desire for the intoxicant has passed beyond the power of self-control, there are clear manifestations of disease showing existing abnormal conditions of the central nervous system, produced by continual use of alcohol, which demands alcoholic stimulation. We see the patient or dipsomaniac just prior to a paroxysm (which occurs at intervals of days, weeks or months), morose, nervous, irritable, depressed in spirits, insomnia prevails, loss or suspension of consciousness and memory. He acts automatically. Then, misled and perverted in the exercise of psychic powers, he is compelled against his will and judgment by the indomitable impulse produced by the irresistable craving or desire, he plunges foremost into dissipation, therefore he becomes not his own master. Alcohol predominates, guides and directs him in its own way. Then arises the question, Are dipsomaniacs criminally responsible? Why should they be?

They are subjects whose reasoning faculties have been dethroned by disease, therefore they are not their own agents. They know not right from wrong. And in a decision recently rendered by Justice Somerville, of Alabama, in the case of Parsons vs. State, he says that "if, by reason of the duress of such mental disease, the criminal had so far lost power to choose between right and wrong, and to avoid doing the act in question, as that his free agency was at the time destroyed," a crime committed by a dipsomaniac must be the act of an unsound brain. It has been proven beyond doubt that the deterioration of the nerve element produced by alcohol is the cause of the continual, irresistable desire for alcoholic stimulants. But not only does it effect the mental capacity of man, but the physical powers also. Dr. Bartholow emphatically declares that "few structures escape the deformation influence of alcohol when it is habitually taken into the system;" while Dr. Flint says that "the deleterious influence on the mental is not less marked than on the physical powers. The perceptions are blunted, the intellectual and morbid faculties progressively deteriorate, until at length the confirmed inebriate, miserably cachetic in body and imbrued in mind, has but one object in view—to gratify the morbid craving for alcohol.

There is a departure from normal mental life, and when the faculties of the mind have become so impaired by the deleterious influence of alcohol as to render the subject incompetent to discriminate between right and wrong. There are clear psychical manifestations of brain disease, and the subject becomes totally irresponsible, just as kleptomaniacs, nymphomaniacs, pyromaniacs, or any other maniacs. And not only do we see the damaging influence to dipsomaniacs, but the deleterious influence of alcohol to the brain is so great as to become transmissive and hereditary. And it is handed down from father to son, from generation to generation. Erasmus Darwin over one hundred years ago wrote "that it is remarkable that all diseases from drinking spirituous or fermented liquors are liable to become hereditary, even to the third generation, gradually increasing until the family becomes extinct." Our rules of criminal jurisprudence must needs undergo great changes. And how must they be wrought? The The House of Correction has proven almost a failure in a majority of cases. It only gives us relief while the inebriates are confined. If science is to be respected by law, and the scientific teachings of to-day are that dipsomaniacs should never be hung for erimes committed while under the influence of alcohol, then what disposition should be made of them? While many subjects are arousing the public mind to the welfare of the human family, we should not be latent in this. The yearly expenditure of such enormous sums of money for the prosecution and defense of the inebriate criminals (not mentioning the disgrace and distress brought upon families) would repay in establishing in each State a place of permanent confinement. Something should be done to stamp out their propagation, either by permanent confinement or orcheotomy.

SELECTED PAPERS.

ANTIPYRETICS.

By Edward N. Whittier, M.D., of Boston, Visiting Physician to the Massachusetts General Hospital.

The mean bodily temperature of warm-blooded animals results from the correllation of three factors, heat production, heat dissipation and heat regulation. It is an expression of the balance mainained between the heat produced in the body and the heat lost from the body, through the influence of a regulative process; it is an equilibrium of temperature, or state, in which the heat produced by chemical changes chiefly in the muscular envelopes of the skeleton and in grandular structures, has a counterpoise in the heat discharged by the skin and respiratory organs, in the process of evaporation, conduction and radiation.

The "constant bodily temperature" of health is the marvellous maintenance of an almost uniform temperature by the mechanisms which coördinate the loss with the production of heat.

Temperature regulation by variations in heat loss, and temperature regulation by variations in heat production have a common source, in a thermo-taxic mechanism which not only controls normal temperature, but also explains the processes by which abnormal temperatures prevail in disease, for fever of necessity implies a disorder of the thermo-taxic mechanism.

What is fever? How defined, what its nature, its pathology, its mechanism, its etiology; what are the various theories bearing upon this subject, and where are the clinical aspects of the fever question to-day?

These and other topics of kindred significance have recently formed the subjects of papers of great value, representing the most advanced opinions and the best conclusions based upon original research and recent literature.

Kindly permit me to preface the subject assigned me with a synopsis of the views relative to fever which are entitled to representation here; for there can be no intelligent and profitable discussion of the subject of Antipyresis which is not based upon a fair understanding and agreement as to the significance of the term Pyresis.

No one to-day rests his definition of fever on the single symptom of elevation of temperature, nor does any one fail to recognize fever as a symptom complex or group of symptoms, in which disordered heat occupies the dominant position and is necessarily the essential feature; but associated with this and so intimately blended with it as to be deservedly regarded as part and parcel of the process known as fever are the other symptoms of the group—disordered circulatory and respiratory functions, loss of muscular power, digestive derangements, changes in glandular secretions, notably of the kidneys, impaired nutrition, tissue changes, loss in weight, and symptoms referable to the nervous system.

Elevation of temperature is the essential and predominating factor in fever, and the questions as to the cause of this abnormal rise are various and vexing, and are by no manner of means as yet adjusted, although during the past two or three years greater advances have been made than ever before towards the solution of the problem.

The combustion theory, the hæmic, the zymotic, the traumatic, the chemical, the nervous theory—each has its advocates and its zealous defenders; but the weight of evidence and of influence, the teachings of physiology and of pathology, influences powerful in moulding opinion, are in the direction of assigning to the nervous theory the highest position as an exponent of the method by which increased production of heat becomes the dominant element or symptom in fever.

It has been said, and well said, that the nervous theory of fever rests upon the tripod of heat regulation, heat discharge and heat production, and that the normal as well as abnormal temperatures can be explained by the predominance in varying degree of each of these processes.

Dr. McAlister, in his lectures on the nature of fever, argues that the doctrine of evolution as applied by Hughlings Jackson to the motor functions can be applied with equal directness and force to the heat producing functions, that the element in thermal mechanism which is lowest, the heat discharging, is the earliest and best organized; this is the vaso-motor apparatus long since demonstrated to control the circulation of blood in the superficial part of the body, thereby in great measure controlling the discharge of heat; the other factors in the process of heat discharging, respiratory and sudorific, are equally well under the control of the nervous system.

Heat producing, the element of thermal mechanism which is second in the order of development, is in fair way of definite localization. This is certainly an inhibitory centre which depresses or controls the production of heat, probably by acting on the trophic cells of the gray matter of the spinal cord (H. C. Wood). It is also part of the logistics of heat mechanism that are cerebro spinal centres, which, when stimulated, excite heat production.

The third element, the most sensitive, the most unstable and the last in the life of tne individual to reach the point of adjustment, is thermo-taxis, or heat regulation. No one has yet localized it, no one has more than described it as least organized, least automatic, least and last developed. It coördinates heat dissipation with heat production. Thermal ataxia implies irregularity of temperature, and that alone.

Thermotaxic and thermogenic disorders when coexisting, imply ordinary fever, while disorder of all, heat regulation, heat production and heat dissipation, implies a dangerous increase of heat, a steadily rising temperature, a general hyperpyrexia of extreme gravity.

Puncture of the caudate nucleus and injury to the spinal cord in the upper cervical region have each been conclusively demostrated to be causative of increased heat production and elevation of temperature, and these experiments on animals have induced all the essential conditions of fever, namely, increased heat production, increased heat loss, increased absorption of oxygen, increased formation of water and carbonic acid and large increase in formation and elimination of urea, with corresponding changes in pulse and temperature curves. McAlister and Welch, McAlister propounding, Welch seconding, discuss the question of the origin of the heat producing phenomena in the existence of nerves whose chief function is on the one hand the disintegration, on the other hand the restoration of muscles, basing these conclusions largely on the results of the researches of Gaskell, whose conclusions were that inhibition, for instance, of the heart's muscle, is restorative through the influence of the pneumogastric, and that the accelerator nerves of the heart induce opposite or destructive changes, and that the muscular substance when disintegrated gives rise to heat and mechanical work.

"If it be found (Welch) that similar inhibitory and accelerator nerves preside over the chemical changes in voluntary muscles and other tissues of the body, then Gaskell's induction as to the existence of thermo-excitory and thermo-inhibitory nerves ranks as one of the most profound and important in modern physiology."

According to Maclagan, the thermal nervous apparatus consists of :

1. Tissues in which heat is formed.
2. Heat eliminating surface.
3. A thermic centre, controlling heat.
4. Nerves from the central controlling power to the heat forming parts of the body.
5. Nerves connecting the heat controlling centre with the parts involved in heat elimination.

So long as all these parts of the thermal apparatus are in harmonious operation, normal temperature prevails, but interruption of this harmony causes the temperature to rise or fall.

Maclagan does not regard as antagonistic the two theories of fever which have secured the strongest foot-hold, namely, the combustion and the nervous theories; he regards each complete in itself, that the combustion theory, "according to which the rise of temperature results from increased activity of the processes by which heat is naturally formed in the body," is in no way inconsistent with the neurotic theory, according to which the rise in temperature is due to impairment of that inhibitory force by which heat production is restrained and kept within normal limits.

Austin Flint embodies his views in three propositions :

1. It is probable that the original cause of most, if not of all, the essential fever, is a micro-organism, different in character in different forms of fever.

(This conclusion is based upon recent advances in bacteriology.)

2. Restricting the definition of fever to the expression, "an abnormal elevation in the general temperature of the body," he regards the pyrexia as due to oxidation of certain constituents of the tissues, due to micro-organisms in the blood; that this oxidation results in increased waste of tissue and is represented by an excess of carbonic acid and urea excreted.

The part which the formation of water within the body plays in the production of heat, is either suppressed or is greatly diminished in prominence.

3. Fever produces abnormal consumption of fat with parenchymatous degenerations; and, finally, he defines an essential fever "as an excessive production of heat in the body induced by a special morbific agent or agents and due to excessive oxidation, with destruction of the tissues of the body and either a suppression or a considerable diminution in the production of water."

Prof. H. C. Wood summarizes our knowledge of fever in three propositions:

1. Fever is a disturbance of calorification in which through the nervous system heat dissipation and heat production are both affected. If there be a fever which is produced by the direct action of a poison independently of the nervous system, we have at present no proof of its existence.

2. Heat production is regulated by a nervous apparatus of which our knowledge is still imperfect. There is certainly an inhibitory centre which depresses or controls the production of heat. It does this, probably, by acting on the trophic cells of the gray matter of the spinal cord. It is also probable that there is a centre which, when excited, increases tissue change, but its existence has not been absolutely proven.

3. Heat dissipation is regulated through the nervous system, so that vaso-motor paralysis is followed by an enormous loss of animal heat, and under favorable conditions by death from cold.

The views of the German school are thus defined in a paper recently published:

Bacteriological investigations have resulted in great advances in our knowledge of the etiological factors of disease. Ziemssen states that we now believe that the effects of the action of harmful agents on an organ or group of organs or on the entire body, are the necessary consequences of action on the cell, and the consequent changes in the physiological function of the tissues.

The bacteriological theory of the need and usefulness in all infectious diseases, of a high temperature, has had many and able advocates, who have argued that the febrile movement was a proper expression of the resistance developed in the patient, reactionary in its influence and results, and destructive to the micro-organisms productive of the fever.

Welch, in his "Lectures on the Pathology of Fever," says : "There is so much which speaks in favor of this doctrine. The real enemy in most fevers is the noxious substance which invades the body, and there is nothing to prevent us from believing that fever is the weapon employed by nature to combat the assaults of this enemy. The doctrine of evolution indicates that a process which characterizes the reaction of all warm-blooded animals against the invasion of a host of harmful substances, has not been developed to such an extent, and is not retained with such pertinacity without subserving some useful purpose. The supposition seems more probable that the increased oxidation of fever aids in the destruction of the injurious substance. According to this the fever producing agents light the fire which consumes them. It is not incompatible with this conception of fever to suppose that the fire may be injurious to the patient and require the controlling hand of the physician."

In opposition to this view of the salutary influence of fever are the results in febrile infectious diseases, wherein treatment not only abates the fever, but also the infection. Mention may be made of the periodical fevers, of rheumatism, etc ; in these diseases specific remedies induce desired results by reduction of temperature and diminution of infectious material. And by analogy and in those infectious diseases wherein there are no specific remedies, experience guides us in the employment of methods by which fever and the morbid processes due to infection are reduced to the minimum of harmful influence.

It is upon this broad platform of clinical experience, upon this firm and enduring basis, that the doctrine of antipyresis rests, and the questions propounded in the laboratory of experimental pathology and bacteriology find their answers in the results of observations at the bedside.

The change to the present and prevailing opinion concerning the nature of fever (for the neurotic theory is the prevailing doctrine) finds its parallel in the change of opinion in relation to the harmful effects of high temperature.

Careful analysis of the transactions of the first and fourth German Congresses of Internal Medicine cannot fail to impress one with the strength of the position occupied by German clinicians and physicians in the opinion that high temperature, and that alone, cannot longer be considered the dangerous element in fever. The recent review of the pathology of fever by Professor Welch, of Johns Hopkins University, leads up to the conclusion, confessedly an advanced position, "that even in fevers, such as typhoid and pneumonia, when the height of the temperature is undoubtedly a most important index of the severity of the disease, there exists no such parallelism between the temperature and the nature and severity of the other symptoms as we should expect if these symptoms were caused by the increased heat of the body, and both clinical and experimental observations strongly support the view, now widely accepted, that the disturbances of the sensorium which constitute so prominent a part of the group of so-called typhoid symptoms, are dependent upon infection," or upon the poisonous substances produced in the body by the pathogenic micro-organisms rather than by high temperature."

The various opinions expressed are well condensed by Baruch, in his admirable article on the treatment of typhoid fever: "Since it may now be regarded as an established fact that high temperature, minus infection, does not produce those serious degenerations formerly ascribed to it, we must seek in the infection process and the ptomaine intoxication those deleterious effects upon the vital organs which undermine the system and eventually cause death."

I recognize distinctly, and all the more forcibly from a somewhat extended examination of the literature of the subject, the great obstacles in the way of a satisfactory exposition of the present status of antipyresis and antipyretics. I have endeavored to place before you briefly, necessarily so, by reason of the limitations placed by custom upon papers prepared for these occasions, some essential facts; but without much greater elaboration of the subject I cannot otherwise than rest here in my definition of fever, and ask your attention in the remaining portion of this paper to the practical application of the subject assigned me.

Antipyresis includes all measures designed to reduce temperature and to resist the noxious influences of the various infections and toxic fever producing agents. Classification of the means employed is not simple; for the therapeusis of antipyresis is a complex subject, and whatever of confusion may seem to exist, can only be explained by the lack of harmony in the various and varying views still entertained as to the nature of fever and the methods to be employed for its control. Those who believe the harmfulness of high temperature rely upon antithermic medication, while those who regard high temperature as relatively harmless and assign to micro-organisms and chemical changes the most important position, causative of the complex process known as fever, rely upon measures to increase the dissipation of heat, and through the influence of the nervous system to improve individual powers of resistance.

Antithermic remedies of recent date include all of the so-called aromatic series, the modern synthetical compounds. The true antithermics act absolutely (according to Wood) on heat production and heat discharge (thermolysis and thermogenesis) through the inhibitory nerve apparatus, diminishing in similar manner, though not in equal degree, heat production and heat dissipation; heat production falling decidedly more, as a rule, than does heat dissipation. This effect has been proven to be independent of any influence on the circulation, and in all probability the result is produced through the nervous system directly upon the chemical movements of the organism.

Antifebrile remedies include the "false antipyretics," which increase heat dissipation by acting upon the vaso-motor system and inducing vaso-motor paralysis, of necessity producing the discharge of animal heat in large volume. Prominent in this class we recognize aconite and veratrum viride, and it is not altogether improbable that in a limited degree by a similar effect on the vaso-motor apparatus some of the so-called antithermics exert an influuence on cutaneous and respiratory discharges of heat.

Both the false and the true antipyretics (and this latter class is made up of those drugs which diminish heat production primarily, and only secondarily and in an unimportant sense promote heat dissipation) have of late fallen into disfavor as means to control the course of disease, to lessen complications or to reduce the mortality rate. Génard closes the discussion before the Society of Medical Sciences at Lyons by stating that the law once more verifies itself, that the obituary curve osciliates in direct ratio with the consumption of antithermic remedies, and inverse ratio to the number of cold baths administered.

Abstraction of heat by cold baths is far less important in its effects than the vitalizing of nerve centres through the reflex stimulus aroused by low temperature applied to the peripheral nerves, and by a reduction of the temperature of the blood circulating in the internal organs.

It is considered that the result of this lowered temperature of the blood is a grateful stimulation to the nervous system, and that the reflex stimulus of nerve centres by cold bathing of the surface of the body induces an innervation for circulation, digestion, respiration, tissue formation and excretion, so that the rapid heart is slowed, the hurried respirations are checked, the failing digestive powers are quickened, and muscular irritability is allayed. Quiet takes the place of restlessness, wandering and delirium disappear, anorexia gives place to desire for food, and more than this, the digestive powers are strengthened, nutrition improves, and the waste of tissue is lessened.

The advocates of the antithermic, internal antipyretic and expectant method in antipyresis, have placed much reliance on the experimental and physiological action of cold applied to the surface of the body, as determined by the researches of Frédericq of Liege, and others, by means of the well-known apparatus of Regnault and Reisset.

The conclusions that "we are warranted in affirming as a physiological law, that under the influence of cold baths organic combustions are energized and augmented," would appear to be well-drawn, and would appear to afford to many a fairly reasonable excuse for not entering upon a course of treatment which might be accompanied by danger greater than that which was hoped would be neutralized; and the teachings of experimental physiology would seem to justify us in regarding the method of cold baths, considered as antipyretic and applied to the treatment of febrile phenemena, as an irrational practice; but we find in the abstraction of heat, in the tonic effects of cold water, in the sedation effected in the nervous phenomena induced by the febrile process; above all, in the results of saving human life, an answer to all objections, a refutation of all opposing theories and a justification of the method.

And this brings full before us for consideration the wonderful, the phenomenal, the almost miraculous control exerted over the death-rate in our chief infectious disease, typhoid fever, by the use of cold baths as an antifebrile agent. And permit me here to remind you that the febrile movement is to be regarded as a symptom complex, in which high temperature no longer occupies the chief place, the prominent position formerly assigned to it, but is secondary in its influence to that exerted by the more important group of fever producing agents formed by the pathogenic micro-organisms, the chemical changes set up in the tissues and the intoxication developed in nerve centres by the ptomaines, the alkaloids of decay. Let me here repeat an axiom in antipyresis. "Abstraction of heat by cold baths is far less important in its effect than the energizing of nerve centres through the reflex stimulus aroused by the shock to the extensive peripheral nerve endings, whereby innervation is furnished for circulation, respiration, digestive tissue formation and excretion, so that the system is enabled to tide over the dangers which would ensue from failure of these functions." "This," writes Baruch, in this admirable article on the treatment of typhoid fever," is the effect of cold bathing in a nutshell—the simple cooling of the blood occupies a secondary, though not unimportant, office."

Permit me to spread before you, and here I again avail myself of a recent paper on the treatment of typhoid fever, "Statistical Evidence in Support of the Claims of the Advanced School of Hydrotherapy"; and you will doubtless concede that never in the history of medicine have statistics of such magnitude, from such reliable and diversified sources, been brought to bear upon a question of therapeutics.

Baruch states that he had gathered from the New York City Board of Health Reports, from 1876–'88, 7,712 cases of typhoid fever, with a mortality of 41.28 p. c. Dr. Delafield, in 1885, states that the mortality of typhoid in the New York Hospital was 24.66 p. c. The mortality rate in the Boston City Hospital has been 13 p. c. The mortality rate in the Massachusetts General Hospital has been 16 p. c. Brand collected 11,124 cases, treated under the expectant plan, with a mortality rate of 21.7 p. c., and with infinite labor and pains, the record of 19.017 cases, to show that "under the general influence of all kinds of cold bath treatment, without, however, its strict enforcement, the mortality had been reduced from 21.8 to 7.8 p. c."

Brand also obtained from 23 sources, German and French, of undoubted authenticity, reports of 5,573 cases treated by the cold bath, as advised and urged by him, with a mortality rate of 3.9 p. c.

In the Second Prussian Army Corps, betweed the years 1849–'66, there were 1,970 cases, with a mortality rate of 26.3 p. c. Later, and under the cold bath treatment, in 2,711 cases, the mortality rate was reduced to 4.30 p. c. This contrast is all the more striking when it is considered that at the same time the mortality rate among French soldiers was 32.2; among Italian, 28.6; among Austrian, 27.4; and in the English service, 23.8. Vogel quotes 713 cases, with a mortality rate of 3.40 p. c. Uannyn, 145 cases, with a mortality rate of 6.9 p. c. Brand, an additional series of 2,198 cases, with a mortality rate of 1.7 p. c. Juergensen, Vogel, Brand, and some others, furnish reports of 1,223 cases, treated strictly and rigorously in accordance with the plan devised by Brand, with a mortality rate of 1 p. c.

From the latter part of the last century, when Currie published his work on the treatment of acute diseases by cold, up to the present time, but particularly between the years 1861 and 1877, many and important as well as authoritative works have been published bearing upon the treatment of febrile diseases, especially the acute infectious diseases, by cold baths.

Currie, in 1797; Giannini, in 1805; in 1812 the results of Recamier's labors; in 1822, Hufeland; Scouttetin in 1843; Jacquez in 1847; and in 1852 the classical work of Leroy. But it remained for Brand, as early as 1861, and in the succeeding years up to 1877, to accomplish the wonderful results described by Ziemssen, as "the work of one who, by the precision and rigorousness which he has put into his method of refrigeration, has merited the right of associating his name with this work of treatment of typhoid fever," the disease, in which, above all others, antipyresis exerts the largest and best influence.

I introduce at this point, in order that I may reinforce the statement relating to difficulties in the classification of the means employed in antipyresis, the division made by Ziemssen in his recent lecture on antipyresis and antipyretics.

Ziemssen groups authorities according to their opinions of the value and form of antipyretic treatment into six divisions:

1. Of those who use the cold bath and do not employ internal antipyretics.
2. Of those who employ luke-warm baths, but do not use internal antipyretics.
3. Of those who, governed by symptoms, make use of either the cold or the luke-warm bath, and internal antipyretics.

4. Of those who regard high temperature needful and advantageous, employing baths and internal antipyretics only in the presence of symptoms or complications dangerous to life.

5. Of those who regard high temperature as necessary and refuse all measures leading to its reduction, confining their attention to the diet.

6. Of those who deny the influence of treatment in the reduction of the rate of mortality.

From this it may be seen that even in Germany, where the study of antipyresis and of antipyretics has been most profound, and the conclusions have been most carefully scrutinized and the effects of treatment, in one direction, at least, have exceeded in the positive results of saving human life, all previous efforts, as yet there remains a very large, and, it would appear, an unaccountable lack of harmony, in views expressed, in conclusions maintained, and in methods governing treatment.

[Dr. Whittier concludes his paper on the above subject (*Boston Medical and Surgical Journal*, November 7) as follows :]

Our chief infectious fever, typhoid, has been selected for the study in its clinical aspect, of refrigeration, and the influence on the disease, of the application of cold to the surface of the body.

The tables of results, as expressed in mortality rates by percentages, wherein the salutary influences of cold baths are compared with all other previous and present methods, ought to carry conviction most profound to the most skeptical—a conviction, that in not conforming to the requirements of the system of Brand, we should fall far short of doing our duty in this most important and frequent class of cases. Juergensen stated, in the Congress at London, that "whenever he attempted to deviate from the rigorous cold water treatment, he was compelled to return to it in order to obtain the best results." I appreciate fully the objections which may be raised, growing out of the lack of the proper mechanical appliances, to enable us to comply with the requirements of the method of Brand in all its precision of detail, but the difficulties to be overcome are far from being insuperable.

I append herewith the method of refrigeration employed by Brand, The reasons why other physicians have failed to secure corresponding results in the reduction of the mortality rate, in typhoid fever· for instance, will be found in defective application of the method insisted upon by Brand; the defect will be found in the absence of the needful rigorousness and precision, so strenuously insisted upon by the originator of the system.

The method of refrigeration employed by Brand is thus described by Dujardin-Beaumetz, in a lecture delivered in Cochin Hospital in 1878.

"The bath-tub shall be traced near the bed. The bath-tub shall contain a sufficient quantity of water, so that the patient when immersed in it shall be completely covered up to his neck. The temperature of the water should not exceed 20° C. (78° F.) Tripier and Bouveret distinguished in this regard three varieties of cold baths—baths with a temperature of 22° to 24° C., of 18° to 20° C., and of 14° to 15° C., and they regulate the temperature of the bath by the intensity of the fever and the resistance to refrigeration.

"Before carrying the typhoid patient to the bath-tub, and in order to diminish the trying and painful sensation of cold, the abdomen is rubbed with the water of the bath. Then the patient is placed in the bath, and all the time that he remains there the head is showered with ice cold water. It is understood that the hair shall have previously been cut short in order to render these affusions more active. Brand recommends also to rub the belly and back of the patient during the time of the bath. The patient is kept in the bath about fifteen minutes; in certain cases the bath may be prolonged to twenty minutes. At the end of this time the patient is taken with shivering and chattering, and is then removed to his bed, and his lower limbs are covered with blankets. As for the rest of the body, in summer only a simple sheet is employed, and in winter a sheet covered with a woollen blanket.

"At the end of twenty minutes the temperature is taken, and during the period of comfort which ensues, some nourishment is given. Every hour the temperature is taken anew, and when the mercury resumes its ascending march, and reaches 39° C. (102° to 103° F.), whether during the day or night the patient is again plunged into the cold bath. Brand has fixed at about three hours the interval which should elapse between the baths, but this period may be made much shorter. and reduced to two hours, or one hour and a half, if there be very high fever heat and great resistance to refrigeration. Brand insists also that in the interval of the baths the nurses should keep constantly applied over the abdomen of the patient compresses wet in cold water, and renewed as fast as they become warm.

"It is well on the inception to resort to cold ablutions with towels (not sponging). Friction aids heat elimination by dilating the cutaneous vessels, and the shock refreshes the nerve-centres (Winternitz). Then the patient grows accustomed to the more energetic bathing, which may be opened with the half bath, combined with gentle chafing, and gradually culminate in the full bath at 65° F.

"The patient, when taking the bath and at all times, should be well supported with such nourishment as is suitable for his condition—milk, wine, broths, peptonoids, etc. No other treatment is employed.

"Such is Brand's method in all its rigorousness and exclusiveness. In order that it may give success, it must be applied from the very onset of the fever. In proportion to the tardiness and lateness of its inception, the chances of success are lessened. In reference to no mode of treatment has the appeal to statistics been more confidently made, and the advocates of refrigeration have endeavored to show that when Brand's system has been followed to the letter the mortality from typhoid fever is reduced to a very low figure."

Internal antipyretics or antithermics have had a large and enthusiastic following. It has not yet been demonstrated by those most skilled in the employment of these remedies to reduce temperature, that the duration of febrile disorders has been shortened, that their course has been modified in any essential particular, or that the mortality rate has been lessened. An eminent authority two years ago claimed that the mortality rate had been reduced by antithermics, but stated that his belief was that the small improvement was attributable to the comfort afforded the patient more than to the removal of danger from high temperature; this year the same authority, after more careful study of the subject, states that he is prepared to agree with Brand, that the only advantage from antipyretic medication seems to be that the patient is able to die with a nearly normal temperature.

The aspirants for antithermic honors have come upon the stage of action with imposing credentials and with all of the influences of hereditary tendencies towards the reduction of high temperature whenever and wherever found, by the use of antipyretic medication. The vast majority have played a feeble part in the process assigned them, and claimed for them, and have failed signally to gain for themselves a fixed position in the list of therapeutical remedies upon which reliance may be placed.

Quinine, carbolic acid, salicylic acid, salicin, salol, antipyrin, antifebrin, thallin, kairin, acetphenetidin, pyrodine, methacetin, phenacetine—how formidable the array; how few the survivors!

I have the pleasure of presenting a summary of the latest and most advanced views and conclusions bearing upon the physiological, therapeutical and toxicological effects of those antithermics which, in my opinion, are entitled to a place as remedial agents in pyrexial disorders.

ANTIPYRIN.

This is a grayish crystalline powder of a slightly bitter taste, very soluble both in water and alcohol.

Nitrous acid produces with antipyrin a new compound, iso-nitroso-antipyrin, which crystallizes in small grayish-blue crystals. The sweet spirits of nitre of the Pharmacopœia almost invariably contains free nitrous acid, and on addition of antipyrin a greenish color is produced by the formation of iso-nitroso-antipyrin. Very large doses of this product produce no perceptible effects on dogs and rabbits. The practical result, therefore, of mixing antipyrin and spirits ætheris nitrosi is simply to render a certain amount of the former inert.

Given to animals in moderate toxic doses, antipyrin causes first a cataleptic state, then increased reflex activity, opisthotonos and convulsions. Larger doses cause complete relaxation, loss of reflex activity, and death.

These results seem to be due to an action both on the spinal and cerebral centres and on the sensory and motor nerves, but the method of action is still obscure.

Moderate doses of antipyrin increase the arterial pressure, toxic doses lower it, and in the frog, paralyze the heart. These effects are probably due to vaso-motor spasm, since antipyrin seems to have an action similar to that of ergot in checking hemorrhage.

Considerable doses in man produce a livid color of the face, especially marked in the lips, due to the production of methæmoglobin, though the blood corpuscles themselves are not destroyed, even after toxic doses. Ordinary doses do not affect the respiration, but toxic doses diminish and finally arrest it.

Antipyrin is rapidly eliminated by the kidneys, appearing in the urine in half an hour and being mostly eliminated within twelve hours.

The urine is sometimes increased in amount, but may be diminished if free sweating has been produced. Urea is said to be decidedly diminished.

Temperature is usually lowered in normal, and almost always in febrile, conditions. The fall begins in about half an hour and is accompanied by profuse diaphoresis.

The depression of temperature usually lasts longer than that caused by other antithermics, continuing from two to twenty hours. It is accompanied by a reduction in the rate, but not in the force of the pulse.

This fall is independent of diaphoresis or of any action upon the general circulation, and is probably due to direct influence upon the heat centres.

Experiments upon dogs show that both in normal and in febrile conditions the fall of temperature is due to decreased heat dissipation.

Antipyrin has been recommended as an antithermic in almost all febrile conditions. It has frequently, however, caused collapse, and must be used with great caution. In phthisis, especially, it appears to produce so much feebleness and depression as, in the opinion of various observers, to forbid its use. In typhoid the patient is usually more comfortable under the action of the drug than at other times. Sometimes, however, it causes a distressing vomiting. The antipyretic uses of the drug are at present attracting less attention than its analgesic properties.

The dose for an adult should not exceed 20 grs., and H. C. Wood advises that the first dose should not exceed 10 grs. These doses may be repeated two or three times, at intervals of one or two hours. Three grains is sufficient for a child of two years, and should not be repeated more than once.

Idiosyncrasies in regard to susceptibility to the drug are not uncommon, and alarming conditions have been produced by small doses. A quantity well borne at one time may cause the most dangerous sypmptoms at another. In kidney diseases elimination is interfered with, and toxic effects may arise. In some cases it is said to act injuriously on the heart muscle, and weakness of the circulation is a certain indication. In children with pneumonia grave toxic symptoms have been seen.

The following are some of the effects which have been observed to follow doses of 15 to 30 grs.: Dizziness, vomiting, gastroenteritis, increased frequency of pulse and respiration, dyspnœa, cyanosis, dryness of throat, coryza, urticaria, herpes, sudamina, erythema, macular eruptions, purpura, œdema of the face, arms and legs, rise of temperature, subnormal temperature, collapse. Several deaths are reported, among them that of a girl aged ten years, who died after two doses of 10 grs. each; a woman with puerperal fever, after 15 to 30 grs.; another woman after 52 grs. in two doses. Granular and fatty degeneration of the liver and kidneys have been found, post-mortem, in some cases, and were attributed to the large doses of antipyrin which were given.

ACETANILIDE OR ANTIFEBRIN.

This is a white crystalline substance prepared by heating together a mixture of anilin acetic acid. It is without odor, causes a slight burning sensation on the tongue, is soluble only in 189 parts of cold water, more soluble in warm water, freely soluble in alcohol, ether and chloroform.

Given to animals, it greatly lowers the temperature, interferes with the conduction of both motor and sensory impressions, decreases the reflex excitability of the spinal cord and causes convulsion movements. Toxic doses paralyze the peripheral motor nerves, abolish reflex activity, cause paralysis, coma and death.

Large doses cause a peculiar discoloration of the blood by reducing hæmoglobin to methæmoglobin. The red corpuscles become granular and in part dissolved, do not adhere in rouleaux, and the serum contains dissolved coloring matter. The amæboid movements of the white corpuscles cease. The prolonged action of large doses produces fatty degeneration of the heart, liver and kidneys.

In ordinary medicinal doses the heart's action is strengthened rather than weakened. The pulse becomes less frequent as the temperature falls, while tension at the same time rises. Experiments on animals have shown that when even injected into the veins, not the slightest fall of blood-pressure is produced. Large doses depress the heart and cause collapse. It is generally thought that the cutaneous vessels are at first dilated.

Cyanosis occasionally occurs, but usually only after doses of 7 grs. or more. It passes off quickly when the administration of the drug ceases, and is not a serious symptom. It is probably a vasomotor phenomenon, but may be due to the production of methæmoglobin.

Cutaneous rash is very rarely seen, but sudamina and redness may occur with profuse sweating.

Fall of temperature is produced both in pyretic and apyretic conditions, but this action is energetic in proportion to the height of the fever. The fall of temperature generally begins within an hour, reaches its maximum in two to four hours, and the effects of a single dose usually lasts from three to six hours or more.

The fall of temperature is usually accompanied by profuse sweating, but less than that produced by corresponding doses of antipyrin. Sweating does not cause the fall of temperature, since the latter occurs when the sweating is arrested by atropine or agaricine. Chilliness is sometimes noticed when the temperature begins to rise, but rarely rigors, and shivering is less common than after kairin, thallin or antipyrin.

Experiments on man and animals indicate that in fever acetanilide produces a fall of temperature chiefly by decreasing heat production. Enclosing animals poisoned by acetanilide in cotton-wool will not prevent the fall of temperature. Whether the antipyretic effect is due to direct stimulation of the inhibitory heat centre, paresis of the spinal heat centre or to an action on the tissues themselves, has not been determined.

Toxic doses cause vascular paresis and increased heat dissipation.

Respiration is but little affected by ordinary doses, but after toxic doses the respirations at first become superficial and frequent, then irregular, and finally cease.

Though comparatively insoluble, acetanilide is readily absorbed, producing noticeable effects, sometimes in ten or fifteen minutes, especially in children. Vomiting or gastric irritation is caused only by toxic doses.

Most observers agree that acetanilide is a moderate diuretic, though not an irritant to the kidney. It is broken up in the system, but after large doses may be excreted in part unchanged, and in such cases methæmoglobin has been found in the urine.

The therapeutic indications for acetanilide appear to be exactly parallel to those of antipyrin. It has been highly recommended as an antithermic in almost all febrile conditions. Guttman, after trying the remedy in 181 febrile cases, says that in typhoid fever he believes that the results obtained with the internal antipyretics are at least as good as those obtained with the cold bath, and of these substances he deems acetanilide the best in this affection. He opposes the giving of small divided doses as ineffectual, and obtains better results with single doses of 4 to 11 grs. In typhoid fever he gives 7½ grs. morning and night, and occasionally three times a day. After twelve or fourteen days 4 grs. is usually sufficient. In this way complete apyrexia, lasting often six hours, was obtained in every case, and the subjective sensations of the patient were greatly improved. Other observers have found small doses to bring down the temperature, quiet muttering delirium, relieve headache and produce sleep.

In phthisis it is a powerful antipyretic, but more liable to cause cyanosis than in any other ailment. It is best given with a stimulant, and sweating counteracted, if necessary, with atropine or agaricine. The usual sweating in phthisis is often diminished or avoided altogether by a dose given in time to prevent the evening rise of temperature. Children bear the remedy well.

In febrile conditions an average dose is from 4 to 7 grs., and 30 grs. a day is usually sufficient. Rheumatic fever and pneumonia seem to require larger doses. Phthisical, weakly and anæmic patients require small doses. If used for some time an increase of dose is necessary to obtain the usual effects.

The long continued use of large doses in some cases causes anæmia and the so-called anilin cachexia, due to solution of the red blood corpuscles. In such cases fatty degeneration of the heart, liver and kidneys has been found, post-mortem, both in animals and men.

Single large doses may cause cyanosis, cardiac weakness and collapse. Ten grains has produced complete collapse in phthisis, and 9 grs. had the same effect in a case of pneumonia. In rare cases collapse may occur from small doses of 3 or 4 grs. In the case of a child 4 grs. every two hours during the day caused death the same evening.

PHENACETINE OR PARA-ACET-PHENETIDIN.

This is derived from phenol, and occurs as a white crystalline powder without taste, almost insoluble in water, but easily soluble in hot alcohol and in warm lactic acid.

Its physiological action on animals has been very little studied as yet, but is probably analogous to that of acetanilide. Very large doses have been given to animals without producing toxic symptoms.

Given in febrile conditions it is a reliable antithermic. The fall of temperature is gradual; bégins in one-half to one hour, reaches the lowest point in three or four hours, and is then followed by a gradual rise, the influence of a single dose of 7 grs. lasting from six to ten hours. The fall of temperature is always attended with free perspiration, but very rarely with any gastric disturbance, rash, cyanosis or collapse.

It has no depressing action on the heart, but seems rather to strengthen its action. The frequency of the pulse and respiration diminishes with the fall of temperature.

The amount of urine is said to be increased. Phenacetine has been detected in the urine, and is also found in the milk of nursing women

It has been found useful in all febrile conditions. In typhoid fever, while lowering the temperature, it relieves headache, clears the mental condition and causes a general sense of relief. To maintain a low temperature, 7 grs. have been given every four hours, and even when continued for a considerable time these doses have rarely given rise to the slightest accident in fever cases. Thirty grains in twenty-four hours is usually sufficient.

In phthisis and other asthenic conditions it may cause a feeling of weakness, and should be used with caution. It has been given for months without any unpleasant symptoms, but seems to lose somewhat of its effect. The usual dose in febrile conditions is 7 grs. Though safe in comparison with the other antipyretics, a few unfavorable results have been reported. Fifteen grains given in a case of migraine caused giddiness, flashes of light, trembling of the limbs and nausea. Ten hours later a second dose produced a feeling of intense cold, cyanosis, cold perspiration and dyspnœa.

In another instance, a papular eruption, lasting three days, appeared on the thorax, abdomen and arms. One-half to 3 grs. in the case of a child were followed by profuse sweating, intense cyanosis and collapse. In two cases in which 92 to 123 grs. were daily given, decided cyanosis was produced, and an examination of the blood revealed the presence of methæmoglobin.

PYRODINE.

This is a white crystalline product, sparingly soluble in cold water, and possesses very little taste.

Large amounts depress the heart and lower blood pressure by a direct action on the vaso-motor centre. It has a directly depressing action on the spinal cord and lowers reflex action. Repeated doses produce jaundice due to hæmo-globinæmia.

Doses of 8 to 12 grs. cause marked reduction of temperature in two to four hours. The temperature remains low for several hours, when a slight rise occurs and is followed by a second reduction, so that the action of a single dose may last an entire day. The reduction of temperature is accompanied by profuse sweating, but no collapse, vomiting or nausea have been noted, even with a considerable fall of temperature.

It has been found a reliable antipyretic in pneumonia, scarlet fever, rheumatism, typhus and typhoid fever. In the latter it readily caused toxic symptoms, namely, jaundice, hebetude, icteric urine, albuminuria and hæmogl binuria. It should not be given in larger doses than 12 grs., and only once in eighteen or twenty-four hours, and not continued for more than a few days. If these precautions are neglected, fatal symptoms may be rapidly induced. Doses of 3 or 4 grs. have been eiven to children.

METHACETIN, OR PARA–ACETANISIDIN.

This is the latest of the antithermic drugs. It occurs as a slightly reddish powder, of a slightly bitter taste, soluble in warm water, but less so in cold water, very soluble in alcohol. It is an efficient antipyretic, causing a fall of three to five degrees in a few hours and frequently profuse perspiration. It may produce collapse, but so far no cases of vomiting, tinnitus aurium or erythema have been reported.

It is markedly poisonous to rabbits, doses of 45 grs. having produced convulsions and death. Its action seems to be similar to that of antipyrin. No hæmoglobinuria has been noticed.

We will now consider briefly the relative values of the internal antithermics:

The superiority of the recent antithermics has, since their discovery, led to the complete abandonment of the use of *salicylic acid* and *quinine* in fevers, except where they exert a specific action.

Kairin, on account of its dangerous, depressing action on the heart, and its destructive effects on the blood, has never been used to any considerable extent.

Thallin, although a prompt and powerful antipyretic, has so often produced violent chills, cardiac depression and gastro-intestinal irritation, that its use has steadily diminished.

Experience of *Methacetin* is still limited, but its poisonous action on animals and its tendency to produce collapse in man do not recommend it.

Pyrodine, as an antithermic, appears to be more prompt, powerful and prolonged in its action than antipyrin, acetanilide or phenacetine, but it also surpasses them in its ability to produce sudden toxic effects, and is especially dangerous in typhoid fever.

A comparison of antipyrin and acetanilide shows the following points of difference:

ANTIPYRIN.	ACETANILIDE.
Action more rapid, but more transitory.	Generally more prolonged and powerful.
More diaphoretic.	More diuretic.
Depressing after-effects.	Stimulating.
Gastro-intestinal irritant.	Non-irritating.
Easily toxic.	Rarely toxic.
Large dose.	Small dose.
Expensive.	Cheap.

These results are by no means uniform, but are sufficiently so to cause a general preference for acetanilide in febrile cases.

Phenacetine greatly resembles acetanilide in its physiological action and therapeutic effects, and so far as present experience shows is equally effective and even less liable to cause disagreeable or toxic symptoms.—*Boston Medical and Surgical Journal.*

EDITORIAL.

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THE EXAMINATION OF DRINKING WATER FOR IMPURITIES BY WASHING WITH ETHER.

We noticed in the August Journal a contribution in the *Sanitarian* (Sept., 1889), by Dr. Theo. Deecke, pathologist in the New York State Lunatic Asylum at Utica, on a rather novel method of detecting the actual contamination of drinking water by offensive or harmful ingredients, particularly if they are at all odorous. It is possible by this method to recover by washing large quantities of water with ether—to recover urine, for instance, so that the odor can be detected, thus making the most practical, if not the most delicate test, enabling us to make an object lesson to apply to skeptical violators of sanitary practices, far more potent than stating parts by million of albuminoid ammonia. The average countryman could not readily grasp as much chemistry as is involved in the expression above, but he can trust his nose to detect urine.

Now, as to the process itself and its details: Two gallons of water are taken, for example, from a suspected well. One specimen is acidified by the addition of a small quantity of sulphuric acid, the other alkalinized by the addition of a small quantity of liquor potassæ, and both allowed to digest over a water bath for a few hours.

Each specimen is now agitated with about two pounds of sulphuric ether for a few days; the ether is separated and evaporated, and the residue, short of complete evaporation, is retained for chemical and microscopical examination.

Without the proper equipment to recover the ether this examination is expensive, but it is not at all tedious in its details, neither does it require any great amount of expert chemical knowledge.

The originator of the process says of the finished produce after the evaporation of the ether:

"Now, in any case where there existed a privy or sewage contamination of the water, this will be rendered at once perceptible in the residue by its odor, which, in the concentrated form of volatile and aromatic compounds, is very characteristic of its source and cannot be mistaken."

The final test of the toxicity of this ethereal extract of water is mentioned: "In one case the ethereal extract was from a well of water in the eastern part of Utica, near the streets not provided with sewers. The well was located on premises occupied by a family of nine persons, of whom eight at the time had been suffering for weeks from a severe attack of malarial fever, which, in two of the cases, had assumed a typhoid character. A few drops of the watery solution of the mixed extract injected into a rabbit weighing two pounds and eleven ounces, killed the animal within a half hour. In another case, where a rabbit of about the same weight was killed within two hours and a mouse in eleven minutes, the extract was from the water of a well on a farm situated not far from a barn in which cows and horses were kept, and a heap of manure. On the farm at the time was a local epidemic of typhoid fever, with two deaths—a fact which led to the examination of the water. The ethereal extract in this case contained, besides crystallizable alkaloids, fatty acids, and volatile aromatic compounds, a remarkable quantity of benzoic acid."

He says further: "The products of the ethereal extract, after the methods described above, are worthy of being investigated more scientifically. Some of them apparently will be found to belong to the class of the so-called ptomaines or cadaver alkaloids, the chemical nature and physiological action of which recently have become the subject of closer study."

Prof. F. P. Venable, of the University, says in a private letter, after some preliminary applications of the ether extraction for suspected water:

"I can see the value of the ether test for the untechnical. It has a decided value for the technical or so-called expert persons also, as it alone points out directly the source of contamination, and points it out unmistakably. Most other tests leave you large scope for such inferences as your frame of mind may suggest."

SENN'S SPLINT FOR FRACTURES OF THE NECK OF FEMUR BY IMMEDIATE REDUCTION AND PERMANENT FIXATION.

We have been greatly interested in a new device introduced by Dr. Senn, of Milwaukee, for the treatment of fractures of the femur. Every one who has had experience with such cases must receive with interest any method that promises better results than we have obtained from the long splint of Physic, the weight and pulley extension of Daniell and his more modern imitators, Smith's anterior splint, Hodgson's modification of Smith's splint, and numberless devices one would have a very remarkable memory to retain.

Dr. Senn, in order to determine the reason of the failure of the femur to unite when fractured, made experiments upon cats, artificially fracturing the femora within the capsule. This experimental work he contributed to the American Surgical Association, undertaken, as he writes, "for the special object of demonstrating, if possible, that bony union after intra-capsular fracture is so seldom obtained, not so much on account of the anatomical peculiarities of the part involved in the fracture as the inefficient treatment which is usually resorted to in its treatment."

"Twenty-three fractures in so many different animals thus produced were treated on the expectant plan or by simple fixation with a plaster-of-Paris dressing. The animals were killed from four weeks to three months after fracturing the bone, and the seat of the fracture was carefully examined in every instance, but in none of them was I able to find any evidence of bony union." The best result he got was pseudo-arthrosis. He finally resorted to drilling a hole from the trochanter major through the entire length of the neck and well into the head, and fastening the fractured parts together with aseptic bone or ivory nails. He did eight of these operations. In the two cases he quotes the bony union was complete.

These experiments led to the application of the principle of early reduction and fixation after a method of his own devising, as follows: The patient is made to stand on the uninjured leg upon a stool supported by an assistant on each side. He is previously dressed in well-fitting knit drawers and thin stockings, the plaster dressing being applied upon the injured limb above the knee. If auto-extension is not sufficient to reduce the limb to the same, or nearly the same length, some extension is applied.

Following Dr. Senn's very logical development of the subject, we are prepared to understand that it is not to senility alone that we are to account for the non-union of the neck of the femur in fractures within or without the capsule, but simply to lack of apposition of the fractured ends of the bone, for in the cases in which apposition was certainly accomplished by means of ivory pegs, union was bony and complete.

Dr. Senn's difficulty in applying the practical test of his discovery to the femora of the human subject was not so easy, and it all hinged upon his ability to apply such force to the separated ends, or some other device whereby apposition would be accomplished. The plan was devised: the fracture is made out to be of the neck of the femur; plaster bandage is applied above the knee of the fractured limb, the patient standing on the unfractured limb, upon a stool, firmly and steadily supported in the erect position. If reduction is not completed by auto-extension, sufficient traction is made to make the fractured limb as nearly as possible the proper length. It is well to consider that this position is somewhat irksome, and a stimulant might prevent fainting. A splint, consisting simply of a thin rod of a iron stout enough to support, is previously prepared. It should extend to the false ribs, and above the knee. It must have an arch over the trochanter, and be provided with the thinner straps of iron, riveted at right angles, four above and four below the arch, bent so as to apply to the contour of the thigh and body. Into the arch a screw is adjusted, to which is applied a very soft pad to cover the trochanter. The plaster bandage is now continued so as to imbed the splint, except over the trochanter, and it is carried around the body and down the thigh on the other side, united by a spica. When completed the patient is lifted into bed and allowed to remain twenty-four hours for the plaster to dry.

When the plaster is thoroughly dried, the screw should be put in position, firmly setting the pad against the trochanter, the object of which is, obviously, to force the fracture in apposition and keep it there. Before its use the skin over the trochanter should be prepared by bathing with dilute alcohol, and it should be daily watched lest excoriation result from continued pressure. Another point to be observed is, that the axis of pressure is not directly in the line of the horizontal axis of the pelvis but a little behind it.

After the patient has been securely put up in this apparatus he may be lifted from his bed day by day and allowed to walk around on crutches. The plaster, of course, prevents him from sitting down, hence the necessity of helping him in and out of bed. The great advantage of providing this daily exercise must be appreciated by those who have had cases of fracture of the neck of femur, one of the great difficulties being to prevent depreciation of health and bed sores. When one looks back upon the dreary months of treatment by the long splint, the irksomeness and depreciation of health resulting from constrained position, sloughs on the heels and the sacrum, the great inconveniences of relieving the patient's bowels without soiling his clothes, and then the almost certain resulting short limb and broken health, any plan of treatment which promises better should be welcomed and thoroughly tested.

The advantages are as follows: The patient is afforded daily exercise; his chances for a bony union of the fracture and consequent recovery with smallest amount of shortening is secured; his total amount of confinement in the apparatus varies from 75 to 90 days; and, lastly, the splint can be easily made by an ordinary blacksmith with little instruction, and the skill necesary to apply it is not great.

The writer of this has just treated a case of fracture of the neck of the femur by this method, in the person of a patient who showed marked signs of senility, who recovered after seventy-one days of confinement in the splint, with almost no shortening and a perfect bony union. We have written so much about Dr. Senn's new treatment, not because our one case would serve as a sufficient substantiation, but to add to Dr. Senn's cases reported in the *Journal of the Medical Association*, and because it deserves at the hands of the profession a thorough trial.

ANTIPYRIN IN DIABETES INSIPIDUS.—Since the publication of a note by Eichhorst, who reported the case of a man, 38 years of age, suffering from diabetes insipidus, in whom the daily amount of urine was reduced from 13 quarts to normal by the administration of 75 grains of antipyrin daily, the value of this remedy in diabetes insipidus has been the subject of considerable discussion, and in the *Therapeutic Gazette* for June 15, 1889, we alluded, in discussing the value of antipyrin in the latter affection has been still further strengthened by the report of three cases published by Dr. M. Opitz in the *Deutsche Medicinische Wochenschrift* for Agust 8, 1889. These cases show that after the prolonged but fruitless employment of numerous other remedies the subjective symptoms of diabetes insipidus, as well as the amount of urine eliminated, yielded to the administration of antipyrin. In one of these cases a permanent cure was said to be obtained; in another the cure persisted some time after the suspension of the drug; while in the third case the amount of urine returned to its original volume after the cessation of the use of antipyrin, but was again reduced to normal when the drug was readministered. With this reduction in the amount of urine secreted there was decrease in thirst, improvement in the general feelings, increase in the body-weight, and undisturbed sleep returned. These cases seem to show that the result was directly attributable to the antipyrin, for in one case the disease had lasted more than twenty years, and had been rebellious to the most varied forms of medication, while in another the amount of urine eliminated daily reached the enormous quantity of 16 quarts, and was yet cured by the use of the drug.—*Therapeutic Gazette.*

REVIEWS AND BOOK NOTICES.

THE PRINCIPLES AND PRACTICE OF SURGERY. By John Ashhurst, Jr., M.D. Six Hundred and Forty-two Illustrations. Lea Bros. & Co., 1889.

This, the fifth edition of this standard work on surgery, has been thoroughly revised and amended, and at the same time kept within the limit of 1,114 pages. Few text-books on surgery are so well-known to medical students of this generation as this one, and its popularity is due to the conciseness and clearness, and to the proportionate treatment which such a wide range of subjects receive.

It is very noticeable that the author has modified his doubts as to the superiority of the antiseptic method in treating wounds. He says: "While I cannot subscribe to the extravagant laudations which this plan of treatment receives at the hands of its more enthusiastic advocates, I believe that, when used with judgment, and, if I may be pardoned the expression, when *diluted with common sense*, it is capable of affording very valuable aid to the surgeon. I have not, indeed, found any diminution in the mortality after operations by its employment, but I find that the average period of convalescence is shortened; that the violence of the traumatic fever and the frequency of secondary fever are both lessened; that, upon the whole, the comfort of the patient is promoted; and that the labor and anxiety of the surgeon are materially diminished. For all of which I am duly thankful."

This new edition is well worthy to supplant its predecessors, and will be more essential than ever, especially to those students who have made it their guide and reference book.

A TEXT-BOOK OF ANIMAL PHYSIOLOGY. With introductory chapters on general biology, and a full treatment of reproduction, for students of human and comparative (veterinary) medicine and of general biology. By Wesley Mills, M.A., M.D., L.R.C.P.,) Eng.) With over 500 Illustrations. New York: D. Appleton & Co., 1889.

The author has outlined his conception of what a text-book of physiology should be in his preface. He sets forth that the comparative method, introducing the teachings of embryology and of the welding principles of evolution, is as necessary for human physiology as it has been for Zoölogy. Another method he strenuously objects to, that of speaking of certain conclusions, for various organs, as though they applied to these organs in whatever group of animals found, or, at all events, for man, no matter whether the species of the animal that had been experimented upon.

It is one thing to be a physiologist, but quite another to be able to produce a book within such a compass as to make it desirable as a text-book for medical students, and so far as we are able to judge the author has succeeded in the task which he has set for himself so well, that those interested at all in such a subject, be he medical student or general reader, would be carried along by the absorbing topic.

After describing biology in general terms, the cell and unicellular plants and animals, he uniquely inserts a section on parasitic organisms, for here, as in surgery and general medicine, we are obliged to acknowledge that bacteria are the "enemies of the constituent cells of the tissues of the highest animals."

The section on reproduction is given a place in the first part of the volume, and has many reasons in its favor, especially if the student had previously had a course in general biology.

The evolution theory of Darwin, as modified by Cope and others, has a stronghold on the author, and hisdiscussion of it under the head of "Organic Evolution Reconsidered," only shows that, however much light we can get by using the Darwinian theory as a working hypothesis, so far as a vaunted essential principle, its advocates are not at one about it.

A marked feature of the book is that at the end of each subject there is a "Summary" in which the author brings together the legitimate facts, divested, as far as possible, of theory, and is most useful and helpful. The method, too, of "Special Considerations," outlining the subject, clarifies in a good degree the tenor of the subject discussed.

The illustrations are all good, and are most clearly brought out by admirable press work, and the letter-press is such as we usually get from "the Appletons" in their best books.

The appendix of the work considers animal chemistry in particular, the whole volume concluding with an index which reviewers always like to see fuller and more analytical.

Our impression is that the author has proven that there was another text-book on physiology needed, and by making in some respects a new departure in teaching, and by keeping distinctly apart what is known and ultimate, from the crude and speculative, he has helped the medical student. Physiology taught in this way is not at an early day thrown over by the physician, but is made a basis upon which he may build therapeutics and pathology with some satisfaction as he advances in his career of progressive experience.

OPHTHALMOLOGY AND OPHTHALMOSCOPY FOR PRACTITIONERS AND STUDENTS OF MEDICINE. By Dr. Hermann Schmidt Rimpler. Translated from the German and edited by D. B. St. John Roosa, M.D., LL.D., etc.

This work is a translation from the German, and as such is remarkably free from ambiguity of expression. It is divided into four parts, each comprehensive in its details. The book is well illustrated and the plates representing the ophthalmoscopic appearances of the fundus in health and disease are creditable in execution and accuracy of description. Part First is devoted to general observations on examination, treatment, errors of refraction and accommodation. The use of antiseptics in eye surgery is commended. The mathematics of the eye are presented in a simple and lucid way, though the objection might be made that the work would have been more attractive to the general practitioner had this section been placed nearer the end of the volume.

Errors of refraction and accommodation are fully explained, and the chapters on amblyopia and aneurysm are made interesting.

Part Second treats of ophthalmoscopy, diseases of the optic nerve, retina, etc. The theory is advanced by the author that in cases of papillitis, or choked disc, increase of intercranial pressure from tumors, new growths, cysts, etc., forces the cerebro-spinal fluid into the lymph spaces of the optic sheath, this causes œdema of the lamina cribrosa which results in stasis of lymph passing from the fundus. The optic nerve may be first affected by the œdema or the vessels may first be obstructed and produce venous stasis, which is followed by œdema.

In the treatment of glaucoma by iridectomy in order to prevent or limit prolapse of the iris, Wecker's method is recommended. A Graefe knife, not too narrow, is introduced, as in the operation for extraction, about one-half a millimetre from the corneal limbus above, counter-puncture is then made and the knife carried upward until about two-thirds of the entire flap incision is completed and only the upper third remains. The knife is then slowly withdrawn. The bridge of tissue left in the upper third prevents prolapse of the iris. A trial of sclerotomy is advised before iridectomy in absolute glaucoma, glaucoma hæmorrhagicum, glaucoma simplex and chronic inflammatory glaucoma when the field of vision is narrowed down to the vicinity of the point of fixation. Among the non-operative measures the use of eserine receives some praise.

In cataract operations iridectomy is recommended in both Graefe's scleral incisions and the flap incision in the corneal limbus. The modern flap operation, without iridectomy and with the use of eserine, is mentioned, but not particularly recommended. In this connection it is interesting to note that both the author, and lately von Graefe, claim that in the modern operation of flap extraction without iredectomy the number of anterior synechias from prolapse of the iris during the period of healing is considerable. Where possible, the upward incision is recommended in cataract extraction for manifest reasons. Pagenstecher's method of extraction of the lens in its capsule is described, and the editor notes a method of his own in which this lens is dislocated with the back of the knife while making the section. No instrument but the knife making the section enters the eye. However desirable the removal of the lens in its capsule may be with the view of preventing secondary cataract, the skill necessary to detach the capsule from the ciliary body and the risk of loss of the vitreous must limit the operation to the most expert ophthalmic surgeons.

Diseases of the conjunctiva, cornea, iris and ciliary body are fully described. The use of strong solutions of nitrate of silver in the early stages of conjunctivitis blennorrhoica is cautioned against by both the author and editor, while nearly every surgeon at the present time recommends their use in varying strengths. Jequirity is highly spoken of in the treatment of trachoma and pannus.

Part Fourth treats of diseases of the ocular muscles, orbits, eyelids and lachrymal apparatus.

The book is handsomely bound, attractive in appearance, printed in clear type, and will prove a valuable addition to the library of the general practitioner. D. A. C.

A REFERENCE HANDBOOK OF THE MEDICAL SCIENCES, Embracing the Entire Range of Scientific and Practical Medicine and Allied Science. By Various Writers. Illustrated by chromolithographs and fine wood engravings. Edited by Alfred H. Buck, M.D. Volume VIII. Containing an Appendix (523 pp.) and a general Index (197 3-column pp.) William Wood & Company, New York.

The completion of this great work with this eighth volume makes good the early promise of the accomplished editor. The whole medical world has been made tributary to its pages, and the medical profession is now ready to express its satisfaction at so successful a finishing.

Completing the last letter of the alphabet in 73 pages, an appendix follows in alphabetical order, the whole concluding with a triple-column index of nearly 200 pages.

The ease with which a busy man can find anything he wants in these volumes makes them specially attractive and useful, and then the contributions are well up to the best and last knowledge of the subjects. Even in well-known and thoroughly treated subjects of anatomy and botany, we find here material for which we look in vain in some of the best works of the day.

As we have taken occasion before to say, Dr. Buck, in his editorial management, has done the profession of this country great good in bringing to light writers of good ability, and a goodly number of them, demonstrating what would hardly have been suspected, that there are many more writers able to instruct, masters of good style and thorough information, than even that large body who are already known by their contributions to medical journals.

The "Reference Hand Book" now becomes indispensable in every private library of any pretensions, and no doctor can afford not to make it his daily companion.

A CLINICAL ATLAS OF VANEREAL AND SKIN DISEASES, Including Diagnosis, Prognosis and Treatment. By Robert W. Taylor, A.M., M.D. Philadelphia: Lea Brothers & Co.

We have before us parts 7 and 8 of this elegant work. We have made mention of it from time to time, as it has been sent to us, and always with embarrassment because of the rivals in the field.

The best portfolios of Europe have been drawn upon in illustrating this work, and in this way one gets what would otherwise cost him an investment in such costly works as Hebra's Atlas and Hutchinson's Illustrations of Clinical Surgery. American lithography seldom equals the German and English examples, and until our lithographers are willing to take as much pains as the Germans, notably, the pictorial art as a means of diagnosis, must fall short of its purpose. The illustrations in this handsome work vary in merit, and too high praise cannot be given to some of it. The letter-press and paper are luxurious, but above all, the text is highly practical and instructive, fulfilling the promise of the author that he would make it a work suitable for practical men, giving a small share of space to pathology. America has of late added some excellent volumes on dermatology to the general fund, and none will be received with more satisfaction than "Taylor's Atlas."

The completed work can now be purchased from the publishers in parts at $20, and those who have the unbound numbers can have them bound by the publishers, at $9.00 for half-Russia, and $8.00 for half-Turkey, they paying expressage on way.

WOOD'S MEDICAL AND SURGICAL MONOGRAPHS. (1) ON THE SURGERY OF THE KNEE-JOINT. By C. B. Keetly, F.R.C.S. (2) AIDS TO OPHTHALMIC MEDICINE AND SURGERY. By Jonathan Hutchinson, Jr. (3) BACTERIOLOGICAL TECHNOLOGY FOR PHYSICIANS. By Dr. C. J. Salomonsen. Vol. IV., No. 2.

This is the November issue of Wood's Monographs, and either essay is worth the price of the number, and would so be doubly esteemed by any one who was at the time especially interested in the subject of which it treats.

In the first essay is contrasted the surgery of the knee-joint, as at present in vogue among the best surgeons of the day, and of that of ten years ago. The author has selected the subject believing that none shows better the progress in surgery. A case of knee-joint disease was a matter of gloomy foreboding, and when the patient asked about the time in which a cure was to be expected, he could only expect to get well after five, or even ten years, and likely as not end in amputation. Of 97 cases of excision of the joint collected by Bryant, 27 died. The surgery of the day, though, deals with a knee-joint under antiseptic precautions, opens the joint by sawing through the patella or dividing the tendon, removes the unsound tissue, dresses the wound with iodoform, provides abundant drainage, and looks for a recovery with a fairly good limb in the course of a few weeks, provided the patient is not a consumptive. The triumphant tone of this article borders on brag.

The second article is exceedingly valuable for diagnostic and therapeutic hints about a class of diseases usually ignored by the general practitioner because, may be, thère are specialists on this line. Let such keep this excellent Monograph near them for consultation, and they will be able, following it, to render valuable service. So much time is lost generally in doing the right thing for the eye, even the routine service of dropping a solution of atropia in the eye, that the laity have come to regard eye diseases as specially destructive or incurable.

Bacteriological Technology is a subject of growing importance, and one which the general practitioner can make some headway in, now, owing to the substantial knowledge of much of the detail, as set forth in this Monograph and others.

THE AMERICAN ARMAMENTARIUM CHIRURGICUM. Geo. Tiemann & Co., New York.

For $1.00 and express freight added, Messrs. Tiemann & Co. offer to send to any physician a copy of this large quarto of nearly 900 pages. It is not a mere catalogue, but even that in this age of the multiplication of delicate and useful instruments, if well classified and explained, would be a most important addition to our knowledge of practical surgical mechanics, but it is almost a complete operative surgery in itself. There is no intimation of who the editor of this volume is, but he has succeeded in making selection of the very gems of surgical descriptions from all medical literature. With no other surgical help than this book, the general practitioner, or even the specialist, would not be at a loss for suggestions on any branch of surgery, the pictorial aids being of the best sort, the majority of them being a long ways above the hackneyed old stock engravings of some of the more pretentious surgeries. This volume must have been produced at a very large cost, and the price is merely nominal.

THE MEDICAL VISITING LIST for 1890. Philadelphia, Pa.

This visiting list has been thoroughly revised, so as to contain all the novelties of new remedies, and an alphabetical table of diseases with appropriate remedies, a complete pocket remembrancer of useful things, and all this in addition to matter which is standard in such lists. It is suited to all methods of book-keeping, and seems to lack nothing to make it complete.

THE PHYSICIAN'S VISITING LIST for 1890. Philadelphia: P. Blakiston, Son & Co., 1012 Walnut St.

This is the 39th year of this old stand-by. Its "Poisons and Antidotes," its "Dose Tables," its list of "New Remedies," specially compiled for it, its "Aids in Diagnosis and Treatment of the more Common Ocular Affections," its "Diagram Showing Eruption of Milk Teeth," its "Dose Table," its "Disinfectants," condensed from the conclusions of the Committee of the American Public Health Association, and very much else not named, brings the standard up to the freshest current of knowledge, and furnishes, compactly, aids to memory, and space for records. All very valuable!

A NEW TREATMENT OF STERILITY.—In an article upon "The Obstacles to Fecundity in the Human Species" (*Journal de Medicine*, May 16, 1886), Prof. Pajot says: "Has the woman an anteversion? Say to her: 'Have the kindness, if you please, every evening when you expect to have intercourse with your husband, not to urinate for five or six hours. Don't ask why; that doesn't concern you. Only don't urinate. You wish to have children? Yes. Well, then, urinate after intercourse, and not before.' If she has a retroversion, say to her: 'Madame, when your menses are over eat plenty of eggs and plenty of rice. Take every night for three or four days a little pill which I am going to give you.' (This little pill contains simply a third of a grain of extract of opium.) 'Manage not to go to stool for three or four days. Then have intercourse with your husband, but don't go to stool till afterwards.' You will say that all this is very ridiculous; yet the whole process is entirely rational, and is based upon anatomical and physiological principles."—*New Orleans Medical and Surgical Journal.*

CORRESPONDENCE.

STRANGULATED HERNIA REDUCED BY ASPIRATION AND TAXIS.

SELMA, N. C., November 14, 1889.

Messrs. Editors North Carolina Medical Journal:

GENTLEMEN :—On the night of February 4th, 1889, I was called to James Spencer, a young farmer, about 25 years of age, living nine miles from my office; found him with a strangulated hernia of the left side. The tumor was about the size of a large cocoanut. He had had a tobacco poultice on the tumor for four hours. Gave him half a grain of morphine, hypodermically, immediately. I tried chloroform, elevating his hips, in fact, almost standing him on his head for two hours, with taxis at intervals of ten minutes.

At the end of two hours, seeing my patient getting worse, and knowing that every hour gave him fewer chances of recovery from an operation, it would have taken three hours to procure assistance necessary to operate; and, my patient having just recovered from a spell of typhoid fever, I concluded to tap the tumor, accordingly I took a hypodermic syringe needle and tapped it. In a few minutes I had the satisfaction of seeing a few wrinkles on the tumor; and, in ten minutes, it was reduced to about the size of a small orange.

I now tried taxis once more, but could not reduce it. Put him to bed with his hips raised about eight inches higher than his shoulders. Ordered towels wrung out of hot water to be kept on the tumor constantly until my return. Left one-fourth grain of morphine for him to take, should he have pain again, and left for home.

I returned the next day about 11 o'clock, a. m., found the tumor a little larger, but soft; he had slept about six hours in my absence, and had n't taken the morphine. I again tried taxis and in a few minutes reduced it.

He was at work the next day, and in four days visited my office to have a truss fitted.

The only thing about this case out of the usual way of treating hernias was the tapping with the hypodermic needle.

Very respectfully,

RICHARD J. NOBLE, M.D.

CURRENT LITERATURE.

THE ADVANTAGES AND DISADVANTAGES OF SULPHONAL.

The advantages of sulphonal are:

1. The ease of administration, being devoid of taste or odor.
2. The freedom from producing a sulphonal habit.
3. In doses of 20 to 30 grs., sulphonal is a safe, and, in the main, a reliable, hypnotic, free from unpleasant concomitant effects, and usually from all undesirable sequelæ.
4. The sleep induced is relatively natural and quiet.
5. It does not affect the pulse or respiration.
6. As compared with amylene and paraldehyde, it is the superior hypnotic. The great disadvantage of paraldehyde is that it requires constant increase in the dose, which is not the case with sulphonal. According to Fröhner, the former drug exerts a destructive action on the blood corpuscles, and other observers state that occasionally it produces symptoms resembling acute alcoholism. As compared with chloral, its action is not so profound, but the duration of the effect is longer. Amyl-hydrate is uncertain and dangerous, as Schlös's cases prove. Furthermore, the smell and taste of most of these drugs is so abominable that patients cannot be induced to swallow them. The majority of them also upset the stomach.
7. That in the opium habit it appears to exert a beneficial effect. We know of several cases in which the drug was particularly fortunate in its results. Further trials in this direction are needed to fully confirm existing evidence of usefulness in this affliction.
8. That, so far as known, it does not affect either the renal or cutaneous secretions, nor does it produce constipation.

The disadvantages of sulphonal are:

1. Its difficult solubility and bulk.
2. Its slowness of action.
3. The liability of its action to be prolonged longer than desirable in some few cases. This seems to be due to an accumulative action, especially liable to occur in elderly people.

4. The unpleasant secondary effects it produces in some instances, such as emesis, headache, nausea, exhaustion, sometimes depression, and occasionally incoördination of muscular movements.

From these facts we may safely conclude that sulphonal is, in the main, a reliable hypnotic, if used with the same care and caution that should be observed in the administration of all drugs, both old and new. In elderly persons, especially, the dose should be prudently guaged and administered with the same carefulness that morphine would be used. Where pain is a prominent symptom, sulphonal does harm rather than good, producing, as a rule, a condition of wakefulness and of excitement, instead of the wished-for sleep. In diseases of the heart or of the vessels, it is well to use the drug guardedly.—*American Lancet.*

NECESSITY OF CAUTION IN PRESCRIBING FOR UNMARRIED PREGNANT WOMEN.

At a recent meeting of the Allegheny County Medical Society, Dr. Kearns spoke of the necessity of caution in prescribing for unmarried pregnant women. He said: "In March last, a young woman visited me for the purpose of ascertaining whether or not she was pregnant. I examined her, and, concluding that pregnancy existed, told her I could do nothing for her. Some time later she called again for certainty in the matter. I examined only her breasts, and pronounced her pregnant. A few days after she aborted, fell into the hands of the police, and was removed to the West Penn Hospital. At her hearing I was called as a witness. The charge was that she had taken pennyroyal pills, sold her by a druggist. Both were acquitted. I desire to emphasize the fact that had I, at the time of her second visit to me, but introduced my finger into her vagina, or had I given her medicine of any kind, I would have made myself liable, perhaps, to arrest, certainly to newspaper notoriety, as accessory to the abortion."

Dr. Kœnig: Dr. Kearns is over-cautious. I conceive that an examination under such circumstances is proper and safe. The same is true of giving any medicine that may be indicated in the case by any ailment that accompanies the pregnancy. The druggist puts on file and preserves the doctor's prescription; this is his safeguard. The druggist, however, who sells these pills, or any abortive, exposes himself to unpleasant consequences.

Dr. W. C. Shaw: I keep in my office an assortment of fœtuses in alcohol, and explain to my friends the growth, life, etc., instructing them that, no matter how early they may destroy it, this constitutes a destruction of life. This has a powerful moral effect in preventing the induction of abortion.—*N. O. Med. and Surg. Jour.*

A PERVIOUS URACHUS.

Dr. P. L. Murphy, the well-known Superintendent of the Western North Carolina Insane Asylum, at Morganton, writes:

"Last June, while out with a party surveying some land the Asylum had bargained for, I noticed a negro boy helping the surgeons who had a peculiar rocking walk, with curvatures of the bones of the thighs and legs, a large misshapen head and other indications of rickets and scrofula. Just as I was leaving he stopped and asked me to examine him. His shirt and pants were wet from the navel down to the knees, and gave out a strong ammoniacal odor. Several days afterwards he called at my office, when I gave him a more careful examination. There was a fissure running from the naval to the pubes, which I at first thought might be an epispadias, but, pulling the sides of the fissure apart, I saw that it was simply a fissure three-quarters of an inch deep, the bottom and sides being moist. There were also smaller fissures running in different directions, varying from one to three inches in length, giving the abdomen in this region a wrinkled appearance. There was no other sign of a navel. By examining with a lens, I found the orifice of the *urachus*, which I soon was able to make out with the naked eye. In size it was not longer than a pin's head. A whale-bone bougie passed through it into the bladder without difficulty. At times, the boy said, the dribbling through this passage was small; at others, most of the urine apparently passed this way.

"As the case was entirely new to me, and I know the lesion is very rare, I thought it might interest the readers of your JOURNAL.

ABSTRACT OF AN ADDRESS ON THE MEDICAL STAFF OF THE CONFEDERATE ARMY AND NAVY.

By F. Peyre Porcher, M.D., of Charleston, before the Association of Ex-Confederate Surgeons of South Carolina at their Annual Meeting in Columbia.

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It is becoming and necessary that a record should be kept of what was accomplished in those four years of a most bloody and disastrous war, when responsible acts often requiring the greatest personal coolness and courage were performed by men of our profession, who had been wholly untrained in the art and requirements of actual warfare. It must be noted, also, that they quietly fulfilled the most arduous, delicate and responsible duties, unaccompanied by the ordinary expedients which are resorted to to incite and cheer the soldier; they were men who it was not deemed necessary to stimulate by adventitious aids, by mention in the gazettes, by brevet ranks conferred, by commendations read at the head of regiments, or reports sent up to headquarters, when the battle ended and the records of victory or defeat were recited.

They stood in need of no such aids, artificial or actual. These were the men who would only be referred to—if fate so willed it—in the list of the casualties; and even in grave official histories of the campaigns it is seldom that the presence, the acts or the self-sacrifice of the medical staff would be recorded. In proof of which, since the war, we have seen no statement regarding the position, the conduct or the services of the medical department of the army in the great contest in which they played a most essential, if not the most conspicuous, part.

Nor did they ask or expect fame, either present or posthumous, for, conscious that, as members of a noble profession, the special duties they were called upon to execute were of a high and exalted order, the approval of their immediate commander, the confidence of the sick and wounded—these, with the support of their own conscience, must be their supreme and only ambition.

With a sphere so limited, with rewards so meagre and inadequate in comparison with those bestowed upon their military associates of similar or superior rank, we are now entitled to award them the highest credit for the unselfish peformance of duty—whether done within the walls of a hospital, to the sick or wounded soldier in his quarters, or, as was often the case, in the face of the enemy, surrounded by danger and death, and equally exposed with the private soldier to shot and shell and to death-dealing missiles from those "instruments of precision," as they were called, which sped with "damnable iteration"

"The leaden messengers that ride upon the violent speed of fire."

The surgeons and assistant surgeons, the generals and the officers lived with their men in the open fields, in trenches swept by the fire of the enemy, literally in ditches and in holes burrowed in the earth, half filled with water, from which they were sometimes in the rainy season driven out like rats. Half starved upon the coarsest food, in cold and storm and rain, exposed to every hazard—these, our brethren of the medical department, quailed not; they patiently submitted to every hardship, often with systems shattered by privation and ill-health, whilst they performed services which required skill, care and serene courage.

No extended reference can be made here to privations endured in prisons; and more than one example exists of voluntary surrender by surgeons in order that they might not be separated from their sick and wounded.

Even those in the comparative shelter of hospitals, specially those placed near to the immediate theatre of the war, had by no means light duties to perform, nor were unexposed to the dangers of the battlefield whilst in attendance upon the sick and wounded. They also were quite within range of shot and shell. Shells passed frequently over the South Carolina hospital at Petersburg. One struck within a few feet of the fourth ward; another entered the ninth, and a third passed through one of the tents provided to relieve the hospital—over-crowded with the sick and wounded. Before it became no longer tenable and was evacuated, the surgeon had to distribute the amputations—including also two resections of the shoulder—among his five assistants, and the whole of three entire days and nights, without cessation. were required to complete the work.

In our opinion no sufficient tribute has ever been paid to the matchless organization of the medical department of the Confederate Army, as represented by the Surgeon General's office; and we regret that more has not been said and earlier, in order that, before the death of that incomparable officer, Surgeon Samuel Preston Moore, he may have learned how much his services were esteemed. A native of Charleston, and a man trained in the army, with all its ideas of discipline, its rigidity and its formality, he may have contracted certain habitudes which deprived his manners—not of the repose "which stamps the cast of Vere de-Vere," for of that he had enough and to spare—but of that softness and suavity which are used in representative democracies and in all non-military communities.

Within his domain, which was a very extensive one, he had absolute power and the fit of an autocrat: the Emperor of the Russias was not more autocratic. He stood *in terrorem* over the surgeon, whatever his rank or wherever he might be—from Richmond to the Trans-Missisippi, and to the extremest verge of the Confederate States. And though appearing to be cold and forbidding, we do not think that Surgeon Moore was cruel, arbitrary or insensible to conviction. We have, ourselves, experienced some of his stern rulings, which were afterwards fully compensated for.

But where, or under what government so complicated and extensive as this, was there ever a department of the public service characterized by such order and precision? Every paper emanating from that office was a model of dispatch and neatness; and the chief introduced various measures for the relief of the medical department, when the country was suffering privations, and in want of the ordinary necessaries of life. It will be remembered, also, that included in the sphere of his duties was the providing the medical supplies needed for the entire army, which had to be imported in great measure; and the hospitals and other branches of the service were fairly supplied with quinia, morphia, iron, chloroform and surgical appliances.

If the writer is permitted to say it here, the hospitals at Norfolk and Petersburg, under his care, were never allowed to be without these essential articles, which were purchased when needed by private contributions from friends in Charleston.

Permit us to say that in a paper prepared for Surgeon Moore near the close of the war, never issued by that officer, as Richmond was soon abandoned, occasion was taken to refer to the diseases from which the Confederate soldier proffered. Prominent among these were chronic relaxing diseases; and the following statement was emphasized—the accuracy of which some of our colleagues may justify: "The dominant fact which must impress and modify the whole course of treatment to which any judicious surgeon would subject him, unquestionably was prostration."

Exhaustion was the great characteristic, as well as the essential element, to be considered and combated: and the natural corrollary was that he was to be nourished and stimulated as far as the resources of the service permitted—and the treatment was, of course, to be modified in view of the prevalent condition just stated—with the studious avoidance of all perturbative, depressing measures, drastics, ptyalism, etc.

What was applicable to well nourished civilians would not apply to the soldier with his gastric irritability, his colliquative disease, his gastralgia, and more especially his nostalgia.

The fact being determined, it was acted upon practically: the promise of furlough was found to be superior to the whole pharmacopœia, and would literally rescue a sick or a wounded soldier from the jaws of death. We have seen them turn to the wall to die, and yet leave for their homes a few days after under the revivifying influence of hope and a return to their families and all which it implied. When it was averred that one or two died on the road, the question was asked, But how many were saved?

From this brief and imperfect description of the depressing effects produced by the circumstances which surrounded the Confederate soldier, the modification in his management became of the first importance.

The "pathology of Shakespeare"—as the learned and elegant Watson has called it—when he speaks of "rasing out the written troubles of the brain" and "ministering to a mind diseased," was therefore required to be observed by the surgeon with the greatest advantage. For, superadded to the prostration and general asthenic state which we have asserted to be the dominant feature of our sick soldiers, there was also very generally extreme apathy as to results, however sombre might be their complexion, or even fatal to their hopes, wishes or lives.

The Confederate soldier resigned himself to his fate. Once that it was decided that a return home was impossible for him and he must remain in hospital, the physiognomy of his condition was admirably expressed by the phrase *poco curante*, which he carried in every feature of his face, in his gait and in his bearing. When he entered the service, whether from compulsion, or, as in nearly every instance, urged by a noble patriotism, his mind was prepared for any fate; and he went forth having adopted the desperate maxim of Mezentius: "*Jam venio moriturus.*" The scenes of danger also through which he has passed had strung his nerves to so high a pitch of tension—so much higher than mere illness, which is far below the battlefield in the stirring intensity or the elevation of the emotion it excites—that he was not impressed by his present peril, however imminent might be the fate which it threatened. He was therefore languid, careless and indifferent, and his mind needed to be aroused and stimulated.

As a striking proof of the apathy of the soldier when he takes asylum in hospital, it may be stated that on the occasion of a visit by General Lee to the farm near Petersburg, to which the sick and wounded had been removed, he visited many of the tents. There was not the slightest excitement or enthusiasm manifested; no exclamation or apparent recognition of their beloved leader by a single individual. Politeness compelled us to occupy a singular rôle, and in every instance to announce the presence of their commander-in-chief and to introduce him to his soldiers.

What a contrast to their reception on every other occasion, as when surrounded by his Generals he rode in review; or when, all life and energy and courage, they were ready for any enterprise—and meeting the same man in the forefront of the hottest battle—with a wild cheer of recognition, they would turn his horse aside that he might not encounter the danger which menaced them.

There was no one so uncomplaining as the Confederate soldier. Every surgeon who has seen active service will confirm the truth and accuracy of a picture drawn without exaggeration. In your daily rounds to offer him relief, he gazes upon you, but does not complain that you pass him by, asks for nothing, does not bemoan his fate, nor murmur at the insufficiency of either food or attendance. He may lay sick under a broiling sun, in a heated tent; or wounded, he may languish in a hospital, amid the dying and the dead, surrounded by everything to appal even well men—

* * * * * * * * Crudelis,
Ubique luctus, ubique pavor,
Et plurima mortis imago;

yet the mere stripling possessed his soul unterrified, and uttered neither cry nor groan. There was always a courage and a resolution mingled with his apparent indifference, which has extorted our admiration, and has compelled us involuntarily to recall the noble description of the invincible Cato: "The whole world was subdued, save the intrepid soul of Cato."

Omne terrarum subacta,
Preter atrocem animum Catonis.

In this display of his courage there was an inexorable sternness almost amounting to atrocity.

When the soldier, leaving friends, kindred and home, delivers up his life for his country, he has paid the dearest tribute which man can offer, and there is a moral sublimity in the act which ennobles the very poorest. In every age the sacrifice has been immortalized in verse and song, and the divine Dante says of him—

"He goes in quest of liberty—which is so dear,
As he knew best who gave his life for it."

Liberta va cercando, ch'e si cara,
Come sa chi per lei vita rifiuta.
—*Charleston News and Courier.*

Portrait of Dr. Cornelius R. Agnew.—The portrait of this distinguished physician and philanthropist, which has been issued by the New York Academy of Medicine, is an admirable likeness, and one that will be acceptable to the large number of his admirers all over the Union. We have a few copies of the engraving that may be had for $2.00 by making early application.

CURRENT NOTES.

Death from Glanders.—Dr. Hoffman, a German physician of 26, recently died from glanders, contracted by making mounts of diseased glands, for microscopic study. Infection was proven by post-mortem to have been effected through the mucous membrane of the respiratory passages.

Pilocarpin in Gall-Stones.—Dr. Lekarskic considers pilocarpin almost a specific in the treatment of gall-stones, basing his opinion on the results of treatment in thirty cases. He administers one-eighth grain hypodermatically once or twice daily. The effect on the pruritus of jaundice is immediate, and adds greatly to the comfort of the patient.—*Bulletin Générale de Thérapeutique.*

An Important Notice to Our Readers.—We have been surprised at the number of complaints of non reception of the Journal. We have increased our vigilance and care in the mailing room, but we are satisfied that it is due largely to the *very poor mail service we have all over the State.* Subscribers will please announce before the close of the month the non-reception of the Journal of that month, and we will send a second copy, but, after a failure of many months to make up files, we cannot promise to do so, although even then we will do our best.

Chromic Acid Poisonous as a Caustic.—Dr. William Weber, of Pittston, Pa., in *Therapeutic Gazette*, calls attention to the poisonous effects of chromic acid used as a cautery, quoting numerous German authorities, and among them men of distinction. It seems not to be generally known that chromic acid is poisonous. It is not stated what amount is dangerous, but it appears to be in cases where large surfaces have been cauterized. This writer has been in the habit of using it, following the success of Dr. W. J. H. Bellamy, in syphilitic mucous patches of the lips and tongue, and the results have simply been inimitable. We use it also in follicular pharyngitis applied pure by means of an instrument made by Snowden of Philadelphia, the acid being fused on the end of a curved spring applicator for cauterizing separate follicles, we have seen no toxic effects. The words of caution are necessary, but we would be sorry to see this valuable agent tabooed: we presume that caution in limiting it to small areas is all sufficient.

Dr. J. C. Gidney died at his home on the 2d day, October, 1889. He graduated at Jefferson Medical College, 1861.

Chas. Chadwick, Ottis R. Wyeth, Louis A. Schoen, George J. Schoen, Chas. F. Herrmann, Geo. Eyssell and Horace L. Roy, druggists of this city, were brought before Judge Worthen, to-day, and each fined $500 and costs for counterfeiting a trade-mark preparation, known as Bromidia.

The Late Dr. Ricord, like many other eminent physicians, was a most benevolent man, but lacking in business capacity. When the Empire came it brought him royal favors, wealth and academical distinction; but notwithstanding his large income, which probably exceeded that of any other French doctor of the time, Ricord was constantly falling into debt, owing to his charitable disposition. He not only attended poor patients for nothing, but actually fed and housed them, and in the case of country or foreign patients he often paid their expenses to Paris. He was several times sold up, and even sent to prison while imprisonment for debt was possible. He was released by the Emperor, who paid his debts.—*Med. Record.*

Antifebrin in Quinsy.—In the *Wiener Medizinische Blätter* for August 8, 1889, Dr. W. Sahli writes that on the second day of a violent attack of quinsy he took 7 grs. of antifebrin, and within a quarter of an hour all headache and pain on swallowing or in mastication had completely disappeared. On the next day there was a slight return of pain, which was again almost immediately subdued by the repetition of the dose of antifebrin, and this treatment was continued on each reappearance of pain with the same results, until the disease had run its course. Dr. Sahli refers to twelve cases of quinsy in which 4 grs. of antifebrin likewise produced satisfactory results. The same effect was also observed by the writer in the relief of pain in angina of an epidemic of scarlet fever and diphtheria. It relieves pain in all movements of the throat, and, by rendering the operation painless, is a great assistance to gargling the throat, especially in children, while, of course, it also assists in the administration of food. Dr. Sahli does not, however, claim that antifebrin is a specific for angina or diphtheria, since the pathological processes are not influenced by its administration. He administers it shaken up in a little spirits and syrup.—*Therapeutic Gazette.*

READING NOTICES.

Succus Alterans.—Roche, Cornwall, Eng., March 20, 1889.—Sir:—I have used in my practice the preparation known as "Succus Alterans," and have much pleasure in bearing testimony to its great value.

For diseases having their origin in a syphilitic source, I believe the Succus to be the only reliable specific, for I may add that invariable success has been met with by me when prescribing the remedy in question, even after the failure of other alteratives. I shall continue to rely on the Succus in all cases I have indicated herein.

Yours, truly,
(Signed) Wm. Rd. Goodfellow,
Member Royal College Surgeons, I. S. A.

R. J. Mitchell, M.D., Thomasville, Ga., says: "I have given S. H. Kennedy's Extract of Pinus Canadensis an extended trial. I am satisfied that it is a greater medicine than it is represented to be. In gonorrhœa, leucorrhœa and gleet, it acts like magic.

℞.—S. H. Kennedy's Extract Pinus Canadensis (White)	2 ozs.
Glycerine	½ oz.
Aquæ	6 ozs.

M. Sig.—Inject three times a day after urinating.

I also used the Dark in chronic dysentery with pretty good results. The case of leucorrhea was of eight months' standing. I hope and predict that in the near future every physician will carry a bottle of S. H. Kennedy's Extract of Pinus Canadensis in his saddle-bags.

Paris Exhibition.—W. R. Warner & Co. have received a silver medal at the Paris World's Fair, being the highest of its kind, in recognition of the following claims:

First—W. R. Warner & Co.'s Pills, quick solubility and accuracy.

Second—Reliability and permanency unsurpassed.

Third—Perfection in coating, thorough composition and accurate subdivision.

Fourth—Excellence in solubility of the finished product in from four to six minutes.

Fifth—Quinine Pills, for accuracy in weight and purity of material.

Also for Warner & Co.'s Effervescent Salts:

First—Superior effervescing properties.

Second—General elegance and excellence.

Third—Stability of the effervescing quality sustained by critical examination.

This is the 13th World's Fair Medal which attest to their superiority. Physician's should be careful to specify Warner & Co.

NORTH CAROLINA
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THOMAS F. WOOD, M. D.,
GEO. GILLETT THOMAS, M. D., } **Editors.**

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ORIGINAL COMMUNICATIONS.

PERSISTENT HEADACHES, AND HOW TO CURE THEM.

By Julian J. Chisolm, M.D., Professor of Eye and Ear Diseases in the University of Maryland, and Surgeon-in-Chief to the Presbyterian Eye and Ear Charity Hospital of Baltimore.

Scientific truths disseminate themselves very slowly. The well-tried and thoroughly proven have to be often discussed, and are as frequently forgotten, before they take root and give evidences of the fruit which they should have early borne. In this category is placed the medical and now well established fact, that among the many causes of most persistent headaches, eye faults are perhaps the most common; and yet, as a rule, they are the *last* to be recognized.

Headaches are acknowledged to be one of the most constant effects of systemic disturbances. It is present in all of the acute inflammatory diseases, and in most of the chronic ones. When any of the important organs of the body get out of order, the head suffers. The stomach, the kidneys, the liver, the uterus, all of them can produce headache. We know with what readiness the emptying of an impacted bowel will clear up head discomforts. The mistake made by physicians is to believe these the exclusive causes of headache.

Many of these sources of trouble to the head are fortunately readily found, and some of them are very easy of detection. But there is a very large number of head discomforts in which no acute inflammatory conditions exist, to explain the disturbance of this sensitive centre. The general health of the individual is good, no one organ seems to be out of order, the digestive apparatus is in perfect condition. The kidneys are sound, with normal urine. If there be a uterus, its presence is known only at the catamenial periods.

Yet the head is not comfortable. That omnipresent cause of general disturbance, Malaria, is invoked to account for the frequent complaining. It is found without seeking for it, and it is exorcised by frequently repeated doses of quinine. Relief comes temporarily under this treatment, as it would under any other, but the cure is only of short duration. When the malarial theory fails and some other has to be sought, too close confinement to the house, or business is suspected, and fresh air with exercise is enjoined. Good at once shows itself from this course of hygiene, but the head discomforts will return.

Then comes a bright thought on the part of the troubled family physician in his vain efforts to find a satisfactory cause for his patients' sufferings. He calls the trouble neuralgia. Under this name the patient is often willing to suffer, obtaining occasional relief by taking quinine, morphia, antipyrin, the bromides, or some allied drug. Finally it slowly dawns upon the patients that when they took medicines or open air exercise, and *stopped work*, relief came; but that when they resumed their occupations of reading, writing or sewing, these being the every day employments of the majority of the population in cities, their heads would ache. Then, from their own observation, they would propose the question to their medical adviser, whether in some way the eyes may not be responsible for much of the trouble which they have so long suffered? Once the discovery is made, the cause and effect can be constantly traced. They soon find out that they can read, write or sew themselves into a headache. This sequence is so common that it ought to have been detected at a much earlier stage of the treatment. The degree of discomfort is always in proportion to the nervous temperament of the patient.

It is a safe rule for a physician to follow, to look to the eyes as a common cause of head disturbances when the frequent headaches of a patient are not produced by some tangible disease. As a cause of headaches eye trouble should always precede malaria, neuralgias, and such commonly attributed, but very obscure, sources of disorders; and this even when the patient's painful symptoms temporarily yield to quinine, iron or arsenic. Unfortunately, when the fault in the eye is paining the head, and is secondarily disturbing the whole body, the eye itself does not necessarily take on congestion, and is not even always painful, so that the casual observer can see in it no cause for trouble.

Many persons know that under the continued use of the eyes the head aches, but the seat of pain need not necessarily be in the eyes themselves. Fortunately, in the majority of cases it is the pain in the eyes that precedes the pain in the head. If this sequence always existed there would be less trouble in making a correct and early diagnosis.

Some patients will give as their case history, that up to a certain time they had as they supposed the strongest of eyes. They overworked them, and now they will stand no work. Since the first break-down in their eye-sight, a very few minutes of reading, writing or sewing causes the eyes to water, and burn, and produces a brow stricture with eye pains. If the work is persisted in the pain extends to the temples, then to the top of the head, and even to the back of the neck. Some refer all the pains to the top of the head, while the back of the head and the neck annoys others the most. In a few even the stomach becomes upset, and nausea follows, not because the liver or the brain is diseased, but as reflected disturbances from the over-taxed eye muscles.

Nature does wonderful work. The function of any organ is a marvel far beyond our comprehension, and the eye is one of the most intricate parts of the body. While we are lost in admiration over its wonderful mechanism, as an optical instrument, we are aware also of some of its imperfections. We find many human eyes far from perfect. In communities advanced in civilization a perfect eye is rather the exception. Nature may start them right, but school abuses soon upset them. *Near-sightedness is becoming too common an eye trouble, and has as its fruitful source the present forced education of the very young.* In these days there is no play time for children. Lessons in school and studies out of school absorb more than the day-light hours.

Brain work is known to be more exhausting than hand work, and young eyes cannot submit to this constant application without injury. There is a Society protecting children from cruel treatment. It prohibits their employment in factories. The factories which should head the list as most abusive to their general well-being are the schools as they are now conducted.

The average citizen would restrict his idea of muscular labor to the hands alone, not knowing that eye work is a perpetual muscular labor, and of a very fatiguing character. When a person is reading, sewing or writing, the small, but all important eye muscles, are as hard at work in their way as the arm muscles would be in sawing wood. They are as capable of being fatigued, and when fatigued suffer pain. This pain need not be restricted to the over-worked muscle. It draws into nervous sympathy contiguous parts of the body, and causes the so-called neuralgias of the head. An extremely common expression daily received from patients is that they have so much neuralgia that it makes their eyes pain them. When explained properly it means they have so much eye-strain that it makes neuralgia in the head, and then pain in the eyes.

All eye faults (and we use this term as distinct from eye diseases) do not cause headache. By eye faults I mean a faulty form of the eye-ball, a deviation from the perfect type, by which easy focusing of the dioptric media to form clear pictures on the retina is interfered with. Good sight means an eye which can make sharply defined pictures on the retina for brain interpretation. If this be done without effort the machinery runs smoothly and without discomfort, even if kept up by the hour or by the day. There is a large class of clear, perfect looking eyes, with apparently excellent sight, but which give way under the continued use which our every day affairs demand. These eyes would never show their faults were they not pressed by continuous labor. They resemble a flaw in the wheel of a railroad car, which can and has run for many years at a

30-mile rate, and seems as good as the best, but when driven at a 60-mile speed goes to pieces. The trouble with such eyes began when additional work was put upon them, and they have given trouble ever since.

The true headache is known as an astigmatic one, from the Greek word *α στιγμα*, not a point, which means that a point of contracted light is not being clearly made on the retina by the focusing apparatus. This astigmatism is usually a fault in the shape of the cornea, although it may be more rarely produced in the lens, or might even be from irregularities in the surface of the retina itself. It disturbs the making of sharp retinal pictures, and, to effect a given purpose, demands on the part of the eye muscles more work than nature intended. Should we similate the cornea to the glass which covers the face of a watch, we can readily understand how the glass may be so mashed out of shape by lateral pressure as not to fit the perfect rim into which it should adjust itself. In examining such a faulty glass we will find that the curvatures are not uniform in all directions; also that in the direction of the mashed edges the curvature is greater than the opposite or true surface of the watch-glass. The cornea is in this manner distorted into astigmatism. When the two meridians of curvature at right angles to each other are taken, they are not found uniform. They should in good eyes represent curved surfaces, all of which are made by one radius. Unfortunately, in astigmatism there is a different radius for each of the two curved surfaces.

The fixed law of optics makes the curvatures of a transparent surface responsible for the focal strength or condensing powers of such a surface. When in an eye these corneal surfaces all correspond, light passing through them on its way to the retina is bent uniformly toward one point, which is called the focus. That brings out on the retina a sharp picture made up of microscopic points of light. If, however, these corneal surfaces are not uniform, the parts corresponding to these varied curvatures, each acting as a lens, will produce two foci of light. Both of these foci cannot be on the same screen at the same time. The perfect part of the cornea will make its image in bright, luminous points on the retina as on a screen. The imperfect part in unfocused luminous rings will cast a shadow over the brighter points, and will more or less blur them. Then comes intuitively an effort on the part of the eye muscles to correct the faulty focusing and make the whole picture bright. This is a muscular act, and has to be repeated for every picture that is made on the retina.

It is easy to calculate how many of these distinct pictures are made in reading or writing, as nearly every letter has to have its own and exclusive photographic impression. The brain must register this, before this impression is effaced, so that the retina may be made ready for the succeeding letter. To those who have never tried the experiment, it is very startling to discover how small a part of a word we clearly see. Shut one eye and look at a word containing six letters. To see all of them sharply, you will find the eye moving from one side of the word to the other, proving that the six small letters cannot all be focused sharply simultaneously.

When a well-shaped eye adapts itself for reading there is, as it were, a steady contraction of the accommodating muscles, a very easy condition to sustain, even for long periods. With an astigmatic eye a new adjustment of the muscular apparatus has to be made for every picture, a species of perpetual motion, which cannot avoid producing fatigue and consequent pain, both in the eyes and in the head. Each surface has to be separately focused by the eye muscles upon the retina, because the two cannot be focused together. To keep the elasticity of the lens in a perpetual state of activity, focusing first for one corneal meridian, and then for the other demands incessant activity of the intra-ocular muscles. This tax is especially demanded when the eye is exercised in near work, the more especially under bad illumination. For an astigmatic eye all work is more or less of an effort, and night work by artificial light is especially fatiguing.

The work of the ciliary muscle in astigmatic eyes may be likened to the irregular squeezing of an object by the hand. A well-shaped cornea focuses all light passing into the eye by one movement, just as the hand seizes and holds an object by the uniform pressure of all the fingers. No fatigue ensues upon this simple muscular activity. If, however, the fingers do not all clasp simultaneously the object, the thumb and second fingers, at one time, to be followed by the remaining fingers, these groups relaxing and contracting at the rate of so many times a minute, fatigue must result. If these irregular muscular hand movements were persisted in, pains would appear in the fingers, and, extending up the arm, would cause an aching of the whole limb.

The source of sensation for the intra-ocular eye muscle is from branches of the fifth cranial nerve, the great nerve of sensation for the whole head. It is a law of the human economy that when one branch of a sensitive nerve is excited all the branches might exhibit sympathetic irritation. From the anatomical distribution of the ophthalmic branch of the fifth nerve to all parts of the scalp we must expect these so-called neuralgic pains to accompany eye irritations, therefore the irregular action of the eye muscles in astigmatic eyes, being a common cause of local irritations, must be one of the fruitful sources of head disturbances. Then will also come into play nerve reflexes, intricate and far-spreading, and not restricted to the head alone. Some patients complain of dizziness, giddiness and irregularity in walking. Others of heart irritation, chest constriction, and of nausea. These various symptoms come on as the immediate sequel of eye work. With the very sensitive these uncomfortable results appear when the eyes have been used for only a short time; with others only after long and continuous application. When, however, the eyes finally break down, the irritability persists even when no close eye work is done. With this condition reading, for even a very few minutes, causes pain. The eyes become sensitive to light, and more or less persistent headache results. The irritation excited through the little use of the eyes during the day may last through the night, so that the patient is never freed from disturbance. With some these head disturbances are so constant from the ordinary uses to which the eyes are put, no eye injection accompanying them, that it is not surprising that the diagnosis is obscure, and that physicians are led astray. I daily see such cases. They report themselves the victims of perpetual neuralgias, or of malarial saturation, or of brain troubles; because the head aches so; or they believe themselves dyspeptics and bilious because of frequent nausea. With few exceptions they have had years of medical treatment, with only temporary relief.

For such headaches, and they are very common, there are but two remedies. The natural remedy is to abandon all use of the eyes, and by so doing not excite the irregular fatiguing muscular contractions which the use of astigmatic eyes bring about. Simple and effective as this remedy is, it is impossible of application. No one in these busy days can make this sacrifice of absolute idleness. The only remedy then left is to correct the excessive and irregular action of the interior eye muscles. This is accomplished by the use of cylinder glasses. When carefully selected, properly mounted and constantly worn, at least for near work, they make all the corneal curvatures act as if uniform in their focusing power.

By wearing proper glasses the eye machinery runs smoothly, and headaches of years continuance disappear as if by magic. A hypodermic injection of morphia cannot more promptly check pain than does the putting on of proper glasses relieve headache. Relief is often immediate with the putting on of cylindrical spectacles, and it becomes permanent under their continued use. Often during the first consultation patients remark *how restful the glasses make the head*, and how the old sensations of discomfort come back the moment the glasses are removed.

Quite recently an intelligent lady, 26 years of age, from a distant city, could not for years recall a single day when she was freed from headache. Very often she had to seek comfort in bed, in a dark room. Her case was one of irregular near-sightedness, or, as it is termed, "myopic astigmatism." When the proper glasses were adjusted the beauty and comfort of seeing was a revelation, which she expressed by face as well as by words. She wore the glasses prescribed, and for the first time in her remembrance enjoyed the comfort of freedom from pain. The giddiness in her case had been so annoying and her gait so unsteady, at times, that she found no pleasure in walking. With the correction of the eye irregularity came a steadiness of tread delightful to enjoy. I found that the nose-bridge of her spectacle-frame was a little too narrow, and suggested that the optician open it a little. For three days she had been leading, as she said, a life of luxury, going where she pleased, reading all she wanted, and with perfect bodily comfort. At my suggestion she visited the optician to have the frames properly bent. Awaiting the correction of the frames in the store, she was forced to go without her spectacles for ten minutes, and her headache promptly returned. As she said to me: "You may imagine my anxiety to get my precious glasses back again, and how I enjoyed them from the moment I put them on."

Astigmatic eyes I see and correct every day; all astigmatic eyes under continued use cause eye and head pains, headaches more or less persistent being a constant accompaniment of such faultily constructed eye-balls. *Properly selected and properly adjusted cylinder glasses alone will relieve such.* I therefore cure persistent, long-lasting, very annoying and more or less severe headaches every day by prescribing glasses. With very few exceptions all of these patients have been under medical treatment; some for very long periods. With these patients nearly every organ of the body, *except the right one*, has been falsely accused of creating and keeping up the head disturbance. Mercury has been given to many of them for supposed liver torpidity. Iodide of potash has been swallowed by the quantity for the purpose of correcting some obscure syphilitic taint, of which there is no history. During the many years of suffering quinine has been prescribed to the extent of ounces to break up imaginary malarial impressions. The temples have been leeched and blistered and the head neuralgias have been vigorously, but unsuccessfully, fought by a host of active remedies. Pessaries have been worn because the uterus was supposed to be in some mysterious way connected with the head trouble. Often it has occurred. when the physician's long list of remedies is nearly exhausted, that a friend of the patient has suggested that the constant headaches of one of her acquaintances was cured by the wearing of glasses, and perhaps in this case benefit might equally come. In this indirect way patients finally get relief.

The object of this paper is to draw the attention of physicians to the fact that constant headaches, even when not connected with imperfect vision, or painful eyes, may be caused by faultily constructed eye-balls. Also that when such is the case medication is of no avail in obtaining permanent relief.

Tonics to the enfeebled, by increasing muscular strength, may temporarily or partially relieve the discomfort. It does not remove the cause, and therefore a tonic cannot cure. *Also that rest for such eyes, when pain in the eyes accompany the headache, effects no permanent good.* The trouble remains to annoy as soon as the eyes are again put to use. There is but one way to rest such badly shaped eyes, viz: correct the fault by properly adjusted glasses.

There are thousands of young persons in our midst who are now impatiently resting their eyes for weeks and months at a time, under bad medical advice. Some are kept from school, a serious break in the education. Others can illy spare the time from their various pressing occupations. All are taking physic, to enable them to escape from annoying headaches which come on whenever they apply themselves. These long-suffering and much abused patients need some one to suggest to them the well established fact that, although the eyes do not visibly inflame, they are a common cause of head discomforts, and that this fact in their respective cases is calling for recognition. This advice should come properly from the family physician, and should not be accidentally obtained from unprofessional sources.

MEDICATION BY INUNCTION.

By T. L. Booth, M.D., Stem, N. C. (Read at a Meeting of the Board of Health of Granville County, held at Oxford, N. C., August 24th, 1889.)

Epidermic Medication, in a general sense, occupies a very uncertain place in the science of Medicine. Men of much eminence and ability have discussed the question *pro* and *con*, and still we are left with but little more knowledge of the subject than our predecessors had.

It is a well-known fact, however, that some substances are readily absorbed, even when applied to the skin in an undissolved state. Such a substance is found in metallic mercury, by the careless handling of which salivation may be produced. Mercurial ointment is only a mechanical mixture of metallic mercury and benzoated lard, and yet it is readily absorbed by the skin and in sufficient quantity to produce mercurial poisoning. Now, it is an evident fact that, as such, metallic mercury cannot enter the general circulation through the normal skin. It must first be reduced to a solution by some agency found in the secretions of the skin. Now, the question naturally arises: What is found in the natural secretions of the skin which has the power of dissolving mercury? We turn our attention to the chemical analysis of these secretions and find that the only free acid found in them is the product of the sweat glands, and the problem as to the solution is solved. The acid which is found in the product of these glands finds its way to the surface by means of the ducts which lead from them, and is probably reabsorbed in some degree by the same agent.

If this acid is found in sufficient quantity to accomplish the solution of mercury, why may it not also dissolve quinia and other substances soluble in acids? And why may they not, in this acid solution, be absorbed by the skin, or even by the sweat duct or the gland itself? The solution of mercury in the same acid is absorbed by some of these agents.

Each gland and its duct is surrounded by a perfect net-work of capillary blood-vessels and lymphatics, the walls of which are in immediate contact with the substance of the gland and duct. The constant movement of the fluids, with which these vessels are filled, greatly facilitates the absorption or endosmosis of any fluid which may be in contact with them.

It has been proven to the satisfaction of my mind, notwithstanding the fact that there is much eminent authority to the contrary, that quinine is absorbable by the skin, and in sufficient quantity to produce its characteristic effect. The mixture of lanolin with quinine in no way affects the composition or power of the former. Under the microscope its crystals present the same appearance as in the unmixed specimen. The only way in which the lanolin promotes the absorption of any substance by the skin is by its direct action upon the epithelial cells and the duct walls, both of which are made softer; the cells more spongy and porous, and the ducts more easily dilatable by the solid or crystalline substance incorporated with it This condition of the duct having been accomplished by the agency of the lanolin (or codliver oil is almost as good), the quinine, in intimate mixture with it, is forced into the funnel-shaped orifices of the sweat-ducts and forms an obstruction to the flow of that fluid, which is constant when not disturbed. Thus the quinine is brought in contact with the free acid which is found in the duct, and that part of it which is dissolved is still confined in the duct by the more external part which has not come in contact with the dissolving agent. This solution is now in immediate contact with the delicate membrane which forms the duct wall, and this membrane is not only in actual contact with, but is almost supplied with its own nutrient capillaries, and by the law of osmosis, by which a stagnant fluid, separated from an actively moving fluid by an animal membrane, is absorbed through that membrane into the actively moving fluid, the solution enters the capillary circulation and by them is taken into the general system.

Nor is this the only way in which quinine may enter the system through the skin. Admitting that it is dissolved by the acid secretion of the skin, which it must be, if brought in contact with it, it may obtain access by mere penetration of the epidermis, which in some parts of the body is very thin and cellular, and, under the influence of a softening agent such as lanolin or codliver oil, become easily penetrable. Having penetrated the epidermis, it comes in contact with the papillæ, which are immediately under the epithelium, and is there absorbed by the capillaries or lymphatics; or, having penetrated still deeper into the cellular tissue, is taken up by the capillaries, with the effete matter or waste tissue which they absorb in their return from the surface. The position which Dr. Ritter takes, viz: "That no fluid can be absorbed by the skin, except when the continuity of the integument has been interfered with," seems to me to be not very tenable. It is equivalent to saying that the skin has no absorbing power in its normal condition, for of course no solid, as such, can by any natural course be conveyed into the general circulation. It is, however, a matter of little moment to us whether the integument remains entirely intact or not, so long as we are not able to detect any lesion or injury to it by ordinary means, and still have our remedies absorbed.

Of course any fluid will be more readily and quickly absorbed by a surface denuded of its epithelial covering, for in such a case the whole papillary surface becomes an absorbing surface and the capillaries of both the circulatory and lymphatic systems are laid bare to the direct action of the fluid applied. But what may thus be accomplished in a larger degree, may also be accomplished in a smaller degree, with the integument still in a perfectly normal condition. The difference between the two is in direct proportion to the area of capillary surface brought into contact with the fluid to be absorbed in each case.

In the former it is reached by direct application, while in the latter it must be reached through the natural orifices of the ducts of the subcutaneous glands, or more slowly through the substance of the epithelial cells. No one doubts the fact that codliver oil, as well as some other of the animal oils, is quite readily absorbed when rubbed on the skin; and why is it more readily absorbed than other fluids of a different nature? As before stated, it is because of its action on the epithelial cells by which they are softened and rendered porous or spongy, and consequently more easily penetrable.

Then, if this be the case, why may not a substance, though not fluid in its nature, if intimately incorporated with the oil, be carried by it or with it into the tissues? Once being in the tissues, if soluble, which is the case with quinine, it must of necessity be dissolved by the fluids with which it comes in contact there.

It being now reduced to a fluid and present in the tissues in contact with the delicate walls of the absorbing agents, which are abundant everywhere, the subcutaneous tissue, absorption necessarily follows. There remains still to be mentioned another means by which the absorption of quinine by the skin may be accomplished. Under certain circumstances quinine may be dissolved in considerable quantity in pure codliver oil. In perfect solution with it, then, there can be no mechanical obstruction, such as may be supposed to exist in a mere mixture, to its being absorbed, which may quite as easily take place as in the case of the oil alone. This is perhaps the easiest and most certain method of administering quinine by inunction.

There are certain of the vegetable oils which are also readily absorbed by the skin. A very familiar example of this is the oil of turpentine. When confined in contact with the skin it is almost immediately taken into the system in sufficient quantity for its presence both in the exhalations from the lungs and the urine to be detected by its characteristic odor. It is barely possible, however, in this instance, as Dr. Ritter declares is the case in every instance, that the continuity of the integument may be so injured by the action of the oil of turpentine as to allow it to pass through without really penetrating the substance of the cuticle. But take another example, which is quite as familiar to many of us, viz: that of tobacco. When a leaf of tobacco is dampened and applied to the chest of a child (which is more frequently done by the laity than by the profession), in a very few minutes evident signs of tobacco-poisoning present themselves, just as though that substance had been taken into the stomach. The idea advanced by Dr. H. C. Wood, viz: "That lanolin being a sebaceous substancce, not intended by nature to be absorbed, but to grease and to soften the fibres of the wool, the possession by it, of any power of aiding absorption through the skin is doubtful," is an erroneous one. It is quite true that lanolin is a sebaceous substance, but its office in nature is not alone confined to softening fibres of the wool, but it also keeps the skin soft.

This is the action which is most important to us in our use of it to produce or promote the absorption of other substances. It must be absorbed by the skin in some degree before it can have any softening action upon it, and in performing this very function for which nature has intended it, it is especially adapted to our purposes. Furthermore, we know by actual experiment that, under the influence of friction, the skin will so thoroughly absorb it that no vestige of it will remain on the outside.

Thus we have conclusive evidence that not only our lanolin and other animal oils absorbed by the skin, but that some of the less adapted vegetable oils are also readily absorbed, even when there is no friction used and there is nothing present to produce any increase of the vascularity of the parts to which they are applied.

Even turpentine has no irritant effect upon the skin of some individuals, though this is by no means the general rule. Relative to the parts of the body which offer the best advantages for absorption, it is obvious, upon a glance at the comparative anatomy of the parts, that the anterior, rather than the posterior parts of the body, should be chosen, and that the inner and more protected parts of the limbs should also be selected. The skin in these parts is softer and more easily penetrable than in those parts where it is thicker and harder. The inner surfaces of the limbs are especially adapted to inunctions, because in them the epidermis is not only thinner, but the skin is abundantly supplied with glands, the ducts of which, instead of being spiral in their course, as is the case in those parts possessing a thicker epithelial covering, are almost straight in their course from the glands to the surface, and hence offer a more direct and easily accessible course to the inner and deeper tissues. Still another advantage possessed by these parts over those supplied with a more abundant supply of epithelium consist in the fact that the subcutaneous glands and their ducts are filled with a substance which is quite fluid in its consistency, while the secretions of the same glands in the thicker and more exposed parts is semi-solid in its consistency, and does not offer the same facilities for mixing with, and eventually dissolving, the solid or crystalline substance which we may wish to have absorbed. Friction performs a very important office in obtaining the absorption of medications by the skin. It not only forces the substance into the orifices of the ducts or through the epidermis, but also increases the functional activity of the parts by the local irritation which it produces. By friction, also, the lymphatics are emptied of their contents, which is prevented from returning after having been forced out by the action of the valves with which even the smallest lymphatics are supplied, and their activity is increased by that condition. The general condition of the system may also exercise a powerful influence upon the absorption of substances applied externally as well as those administered internally. Take, for instance, a subject who is in perfect physical health, whose general system is supplied with everything necessary to his comfort and whose alimentary canal is in perfect working order, and perhaps filled with nutritious material. In vain you offer anything to the minor absorbing powers, they are comparatively inactive, for the physical economy feels the need of nothing, and nature has arranged it that when least needed the functions are least active.

Take another, on the contrary, who is dying of inanition; in whom every fibre of every muscle is, as it were, crying out for nourishment, when the alimentary canal, either from disease or functional inactivity, is unable to supply the absolute need of the general system; then you find a very different state of affairs. Every organ, be it ever so small, which can be converted into an absorbing agent, is called into play; every subcutaneous gland becomes a recruiting agent of some activity; every orifice of every duct, through which any substance can enter is yawning and ready to receive anything presented to it in an acceptable form. Doubtless a disregard of this law of the economy is in some degree responsible for the negative results obtained by some eminent scientific investigators.

In any experiment, when a negative result is obtained, it does not necessarily prove any general fact, except as regards the individual upon whom the experiment is made; but to the contrary, when a positive result is obtained, the general fact is proven. I will here relate two cases which are of some interest in this connection.

W. B., a white boy, aged four years, was taken in May, of this year, with a very severe attack of dysentery. In addition to the severity of the usual symptoms which accompany dysentery, on the second day of the attack his stomach became so irritable that it would retain absolutely nothing. During the third twenty-four hours of the attack he went to stool, as I was assured by his mother, 30 times, discharging each time a little blood and mucus, or bloody mucus.

On the fourth day I discovered a decided intermission in his fever, which up to that time, from the beginning, had been higher and constant, so far as I was able to determine. It now became evident that I could no longer depend on the local applications to the diseased bowels, with which I had previously attempted to allay the severity of the inflammation; and that unless I could by some means meet the indications for quinine, my patient must soon succumb to the severity of the combined symptoms.

I had no faith in the efficacy of inunctions of quinine, but being deterred by circumstances from its hypodermic use, following the suggestion of Dr. J. W. Booth, who was called into the case at this time, I determined as a last resort to try it. Accordingly I ordered quiniæ sulph. ½ drachm, lanolin and codliver oil q. s.. M. ft. ung., and directed half the ointment to be rubbed into the inner sides of the arms and legs during the intermission. Notwithstanding the fact that all the ointment seemed to have been absorbed, the temperature still rose, but a little later in the evening than previously. I pursued the same treatment during the next intermission with about the same results. On the fourth day after this treatment was begun I ordered an ointment prepared in the same way containing just three times as much quinine (1½ drachms), and ordered the whole of it to be rubbed into the skin of the arms, legs, chest and abdomen during the next intermission. Much to my surprise, the fever did not rise until much later in the evening, and then not so high as previously. The same treatment was continued and no elevation of temperature again occurred. There were also present evident signs of cinchonism. The severity of the other symptoms began to abate with the fever, and I soon had the satisfaction of seeing my little patient convalescent. My experience in this case led me to pursue the same plan of treatment in the case of my baby, a boy, aged fourteen months, who was attacked in the same way a short while after the case just related. He also had dysentery with intermittent fever distinctly marked. His stomach was very irritable, and would retain no medicine of any kind except occasionally a little lime water with milk. I ordered quiniæ sulph. ½ drachm, lanolin ½ oz., codliver oil, 2 dr. M. ft. ung., and rubbed the whole of it into the arms, legs and abdomen during the intermission. After pursuing this treatment for three days the febrile element was conquered.

But the dysentery held on for some time, and was finally conquered by rectal medication. Dr. S. D. Booth, of Oxford, N. C., related a case to me which occurred in his practice, in which, by mistake, a large quantity of quinine was rubbed into the skin of a young baby. He was sent for in haste, and found the baby profoundly cinchonized. I have never had occasion to use inunctions of quinine in the treatment of adults, but I see no reason why it should not succeed if the quantity used should be proportionately as large as in the case of infants. In its use it should be borne in mind that the quantity required is very much larger than when administered in any other way, and that the parts should be rubbed with the hand until no trace of the ointment remains.

MOIST GANGRENE OF BOTH LEGS FOLLOWING PARTURITION.

Reported by Dr. W. F. Faison, Jersey City Hospital.

P. G., a robust young German woman, 19 years old, was confined for the first time on June 2d, 1889. No physician attended her. Two days afterwards she was admitted to the hospital. She showed no symptoms of septic infection till June 7th, five days afterwards, when she was seized with a severe and prolonged chill, followed by a temperature of 105° F. Knowing that her hygiene surroundings had been bad, I thought she might be suffering from septic intoxication due to auto-infection and prescribed fluid extract ergot and quinine sulphate, and irrigated the vagina and uterus with a solution of bichloride of mercury (1—2000). Her child was taken from her breast, and, in spite of every precautionary measure, an abscess was developed in each breast to complicate the case. Chills continued every few days with a morning remission and evening exacerbation of temperature ranging from 102° to 105° F. Within ten days she complained of cold feet with an intolerable burning pain, and within fifteen days the characteristic dusky hue of gangrene had made its appearance on both feet, which were icy cold to the touch, became black, and soon began to slough, exhaling the horrible odor peculiar to moist gangrene. Two or three abortive attempts at forming the line of demarcation were made, but the morbid process continued, reaching on the left leg within three inches of the knee, and on the right leg three inches above the ankle before the patient succumbed.

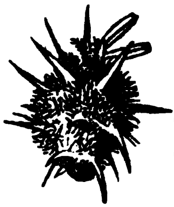
Her general symptoms were those of collapse; the pulse rapid, feeble and finally became almost imperceptible at the wrist, the respiration sighing, the breath emitting a sickly sweetish odor, and the whole body bathed in a profuse cold perspiration, just before the closing scene well-marked "typhoid" symptoms were developed, ushered in by a low, muttering delirium, hypogastric tenderness, and considerable tympanitis, sordes collected on the teeth, and the tongue was brown and dry.

She died on July 11th, 1889, of pyæmia. I would not attempt to give the cause or causes of the gangrene, but from the fact that there were no symptoms of phlebitis, and from the fact that the blood is known to contain an enormous increase of fibrin in the puerperal state, and is charged with effete products when the hypertrophied uterus is undergoing involution, these facts, in conjunction with the open avenues for entrance of germs (sinuses of the uterine blood-vessels and lymphatics), and from the want of suitable preventive treatment, both against auto- and heterogenetic infection, it seems possible that this may have been one of the few important cases reported by Sir James Simpson, in which the arterial obstruction was due, not to embolism, but to local thrombi caused by blood dyscrasia peculiar to the puerperal state.

A SAND SPUR IN THE CHINK OF THE GLOTTIS FOR FOUR DAYS.

Reported by K. P. BATTLE, M.D., Raleigh, N. C.

A boy of twelve years was recently brought by his physician for the extraction of a sand spur from his larynx. This is the local name for the burr or seed of a coarse kind of grass, well known in the extreme eastern portion of the State. It resembles somewhat the more widely spread cockle burr, but its spines are much less thickly set and much longer, stiffer and sharper. A large, full grown specimen is represented in the cut, but the one with which we had to deal was not more than half that size.* The boy, four days before I saw him, had gotten one of these vicious objects fastened upon his hand, and while putting it to his mouth to pull it off with his teeth had taken a sudden inspiration and drawn it into the larynx.



When I made an examination the spur was seen caught between the true cords about the middle of the rima glottidis, one or more of the spines piercing each cord. At each point of puncture there was a white spot surrounded by a bright red areola, and the whole larynx was congested. The pharynx was sprayed with a four per cent. solution of cocaine and a pledget of cotton securely fastened to a laryngeal probe was soaked in a sixteen per cent. solution and pressed against the posterior surface of the epiglottis and the upper parts of the larynx. The solution was in this way made to trickle down upon the wounded parts below. The cords themselves were also touched, gently, as the parts came to feel the anæsthetizing effect of the cocaine. When the full effect was shown to have been obtained by the use of the wet cotton, and not till then, a flexible-tubed forceps, with nippers opening antero-posteriorly, was inserted, under the guidance of the throat mirror, and the spur was grasped and withdrawn. A slight resistance was felt, showing that the body was firmly fixed in the tissues.

The attending physician had obtained a good view of the larynx, and had made several attempts to remove the burr, but had not succeeded. In discussing the subject we agreed upon the causes of the failure, and, at his suggestion, I mention them in the hope of helping the general practitioner who may be called to remove a foreign body from a similar situation. In the first place, he did not use the right kind of forceps. The blades of the only one he had at hand opened from side to side, and not antero-posteriorly, and with that kind of forceps it was almost an impossibility to remove the burr from the position in which it had been caught. Another mistake made was in not applying the solution of cocaine to the larynx carefully *until it was ascertained that the parts were thoroughly anæsthetized* before making an effort to remove the foreign body. When this is properly done the attempt may be made with deliberation and with a far greater chance of success. It is well to remember, however, that the maximum of effect from cocaine is more transient in the larynx than elsewhere, and does not last more than about three minutes; and, further, that cases are met with in which no reasonable amount of cocaine seems able to give complete anæsthesia. In this case the body was fairly grasped by the antero-posterior forceps mentioned above at the first attempt, without causing the slightest movement on the part of the muscles of the pharynx or larynx, and this, as a general rule, may be expected.

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*NOTE.—*Sand-spur*, *Burr Grass*, *Hedge-hog Grass*, *Cock-spur* are the distinguishing names by which *Cenchrus tribuloides* goes in different parts of the country. It is a worthless, coarse, recumbent grass, very abundant about the sandy sections of the Atlantic sea-coast, and around the great lakes. The prickly involucre, a cut of which is given above (is by Sprague, as found in Gray's Botany), is a great annoyance to the bare-footed boys. The spines of the *sand-spur* (as it is commonly known on our sea-coast) are woody and rigid, very sharp and barbed, and very difficult to pick out with the fingers when once they get lodged in the stockings or elsewhere, as in pulling with the fingers of one hand they stick into the other. In the case above reported the patient pulled the "spur" from his stocking with his fingers, and then removed it from his fingers with his teeth, whereupon it stuck to his tongue, when, by an unfortunate sudden inspiration, induced by the pain of the prick, it dislodged itself and stuck into the larynx. Dr. Battle's skill in removing this troublesome burr is greatly to be admired. An attempt to remove it by me, continued during two sittings of more than an hour each time, failed, although I had the foreign body in plain view in the laryngeal mirror, and had the parts well cocainized, as I thought. I had at hand only a pair of laryngeal forceps, of good shape, but opening laterally, and as the blades had to be opened just before I reached the burr, and as it was well impaled somewhat below the level of the cords, my maneuvre necessarily touched the cords before the instrument reached it, causing an effort at closure of the glottis. Dr. Eattle, with a pair of Toerck's forceps, picked it up without touching the well anæsthetized cords. T. F. W.

SELECTED PAPERS.

ON THE USE OF ANTIPYRIN IN MALARIAL FEVERS.

By William T. Prout, M.B., C.M., Edin., Assistant Colonial Surgeon, Gold Coast, Africa.

The antithermic properties of antipyrin have now been recognized for such a long period of time that it may seem superfluous at this date to call attention to them, and yet there is a class of cases to its use in which attention has been little directed, and in which I believe it has not hitherto been much employed. In this drug, however, we possess a remedy which, in my experience, is absolutely certain to cut short the duration of a paroxysm of malarial fever, and when used in combination with quinine, shortens the whole attack. (When I use the word certain, I must point out that I refer to an attack of pure malarial fever, no matter how severe; that is to say, an attack uncomplicated by any other distinct disease, such as hepatitis, enteritis, etc. In such cases antipyrin will not give the same results.)

Diaphoretics, from the simple infusion of some garden herb, culled from a native's garden, or the good, old-fashioned mixture of liq. ammoniæ acetatis and sp. ætheris nitrosi, to the more active remedies, jaborandi or Warburg's tincture, have each found their advocates, and have been more or less successful. But to each of them there is the objection that, however successful they may be in the majority of cases, yet every now and then we meet with some case which baffles all our efforts, where the temperature remains persistently high, and where no drug seems to possess the power of producing diaphoresis and of diminishing the pyrexia. It is in such cases as these, as well as the simpler forms, that antipyrin is specially valuable.

One of the most striking effects when administered during the hot stage is the almost immediate feeling of relief which it affords to the patient. All those who have suffered from an attack of intermittent or remittent fever can recall the intense throbbing headache, the constant feeling of oppression, and the aches and pains in the loins and limbs which render any one position impossible for any length of time. Here the anodyne properties of the drug come into action, and, if they do not completely relieve these distressing symptoms, at least lessen them. As a result of this, the patient becomes drowsy, and after the second dose usually falls into a sound, refreshing sleep. At the same time the skin begins to feel moist, and this increases until the patient is drenched in perspiration. The temperature steadily falls, and in most cases does so until it is subnormal. The fall of temperature begins almost immediately, and the rapidity with which it sinks varies with the individual case and probably with the stage of the attack at which it is administered. In Case IV., for example, the temperature was subnormal four hours after the administration of 15 grs. only, while in Case V., with much larger doses, it took seven hours to fall from 103.8° to 99.4°. The duration of the intermission is from twelve to eighteen hours; but this probably depends upon the action of the quinine which I always prescribe *after* the antipyrin, and which intensifies the action of the latter drug, as the diaphoresis becomes more marked and the decline in temperature more rapid after its use.

Quinine alone will not do this, especially if the temperature is over 100°, and is still rising. In many such cases it is practically useless, and, in fact, seems to have an irritating effect rather than otherwise. It is when the temperature has *begun* to fall, and during the intermission, that quinine is invaluable. The combined use of these two drugs has given such satisfactory results that I have not tried antipyrin alone, except in one case, a native, where certainly cure eventually took place, although the duration of the attack was considerably longer. When we remember that antypirin belongs to the same group of chemical substances as quinine, it would almost seem from this that it has some specific action on the malarial poison, although, of course, one case is far from conclusive.

The action of antipyrin on the pulse is variable. It generally slows and steadies it and increases its tension, while at times it has a little effect.

Antipyrin is well retained by the stomach—an advantage—and by no means an unimportant one, which it has over other diaphoretics, especially in countries like the Gold Coast, where gastro-hepatic disturbances are an almost invariable concomitant of malarial attacks, and where vomiting frequently constitutes one of the difficulties of treatment.

Macalister, in summing up the effects of antipyrin, states that it increased skin radiation, diminished the difference between peripheral and central temperature, lowered the temperature as a whole, diminished thermogenesis, diminished the production of nitrogenous waste, and therefore, nitrogenous metabolism, and frequently, but not always, increased perspiration, while it generally slowed the heart and slightly increased the tension of the radial artery. In malarial fevers, however, the effect on perspiration is much more marked, and this, in addition to its thermolytic and thermogenetic properties, may afford an explanation of its action. Taking for granted that this class of fevers is due to a microörganism (Laveran, Marchiafava, Celli and others), we must attribute the rise of temperature to the effects of the morbid products derived either directly from the microörganism or from its destructive action on the red blood-corpuscles. That malaria is a disease of which the essential characteristic is a destruction of the red blood-corpuscles, is now well established; and it has recently been shown by Drs. Bristowe and Copeman in a series of experimental observations on a case of paroxysmal hæmoglobinuria, that the destruction of blood-corpuscles is itself sufficient to cause a rise of temperature; consequently, when we eliminate these morbid products as rapidly as possible through the sweat glands we diminish the pyrexia. This result being achieved, quinine, which is a specific poison to the malarial organism, now steps in and prevents its further development.

Probably the same explanation can be given of the well-known beneficial effects of full doses of calomel in malarial fevers, apart from the fact that quinine forms an insoluble salt with the bile, and hence will not act until the latter is removed. The seat of blood destruction in health, and of the removal of the products of this, is the portal circulation. In malaria, however, the excessive blood destruction throws such a strain upon the liver that it is unable to act, and gastro-hepatic disturbances ensue. Calomel, by removing the accumulated bile, allows the liver cells to set to work on the morbid products circulating in the blood, and thus acts indirectly on the temperature.

With reference to the manner of administering antipyrin, I find that large doses are most satisfactory, and that they have never in my experience been followed by bad results. Thirty grains should be given at once, and repeated in an hour or an hour and a half, and a further dose of 15 grs. may be given if required. During the intermission quinine should be given freely.

The following five cases of fever occurring in Europeans, will serve to illustrate the action of antipyrin :

CASE 1.—Patient A. B. had just returned to the coast from a six months' expedition to the interior, during which he had had an attack of fever. When I saw him at 7½ o'clock, p. m., his temperature was 103.2°. Face flushed; tongue very foul. Bowels had been moved during the day by a dose of some effervescent saline. There was slight tenderness over the spleen, but none over the liver; skin hot and dry; great headache, and pains in muscles of back and legs. Thirty grains of antipyrin were taken at 8 : 30 p. m.; 9 p. m., temperature 102.8°; skin beginning to feel moist; headache lessened and patient sleepy. Ordered 30 grs. at 9 : 30 p. m., and at 10 p. m. quinine 15 grs., with a pill composed of pil. hydrarg., pil. col. et hy., āā gr. vj.

Second day. An effervescent saline was given at 6 a. m., and when I saw him at 8 a. m. his bowels had been freely moved; temperature 97.8°; headache had disappeared, and patient felt better generally. Quinine grs. 15 had been given at 6 a. m., and 10 grs. were ordered to be taken at 9 a. m., 12 m. and 4 p. m. At 7 p. m. there was only slight tendency to return of the fever, the temperature being 99.3°. Ten grains of quinine were given at 9 p. m. After this there was no return of the fever, two or three days' course of tonic treatment being all that was required to complete recovery.

CASE 2.—This case is very similar to the first one. Patient C. D. had been up in the interior for two and a half months, and had just returned to the coast. He had been complaining of a constant feeling of nausea for some days previous to the attack, pointing to some gastric disturbance with hepatic inactivity, a very common antecedent to fever on the Gold Coast. When I saw him at 4 p. m. the temperature was 102.8°. There were great feeling of discomfort, great headache, and pains in the loins and legs; tongue very foul; 9 p. m., temperature 103.2°. The medicines which I had ordered only arrived. Gave antipyrin grs. 30, to be repeated in an hour, and afterward quinine grs. 15, along with pil. hydrarg. and pil. col. et hydrarg. aa gr. vj.

Second day. 8 a. m., patient said he slept well after the medicine, and the headache and pains disappeared. Bowels freely moved. Quinine grs. 10 at 8 a. m., 12 m. and 4 and 7 p. m. At 7 p. m. the temperature is 99.2°, showing a tendency toward return of fever, but otherwise patient is all right. Another 10 grs. of quinine to be taken. From this date there was no return of the fever.

CASE 3.—Patient E. F. had had a very slight attack of fever a few days previously, from which he had recovered, but having had the imprudence to go on duty (contrary to orders) in the afternoon, during which he was exposed to the sun, a second and severe attack was the result. Exposure to the sun is not unfrequently followed by an attack of true malarial fever, and the explanation is probably to be found in the fact that the vitality of the system is lowered, and as a result the malarial organism, which has hitherto remained dormant, is able to act upon the weakened body. In a region like the Gold Coast, where one is constantly exposed to the malarial poison, and where the system may be supposed to be saturated with it, any lowering of vitality, from whatever cause it may arise—exposure, excessive use of alcohol, etc.—is liable to be followed by an attack of fever. 7 p. m., temperature 104.4; pulse is bounding and incompressible; tongue is covered with a thick white fur; breath offensive; has been to stool once or twice to-day. There is tenderness both over the liver and spleen; constant feeling of nausea, and patient has been vomiting at intervals. Twenty grains of antipyrin were given at 8 p. m.. At 10 p. m., temperature is 103°, and skin is beginning to feel moist. The same dose of antipyrin was repeated, and 6 grs. of calomel were given. Twenty grains of quinine were ordered to be taken in an hour.

Second day. 8 : 39 a. m.; patient slept well, and awoke during the night bathed in perspiration. The temperature is now 97.9°. Bowels have been moved freely. There is still a slight feeling of nausea. Ten grains of quinine were given at once, and at 10 a. m., 1, 6 and 9 p. m.; 8 p. m., temperature 99.4°.

Third day. Temperature 98.7°. Patient is feeling better, but weak. From this date there was no return of fever, and tonic treatment was prescribed.

CASE 4.—Patient G. H. was a man with marked alcoholic tendencies, and the present attack I attributed to alcoholic excess two days previously. When I saw him at 7 p. m. his temperature was 102.5°; his skin was hot but moist; there was considerable headache; tongue was foul and tremulous, and there was a disagreeable taste in the mouth; there was a constant tendency to vomit; tenderness over liver and spleen; pulse fast and weak. Ordered 15 grs. of antipyrin at once, and 10 grs. of quinine to be taken at 8 p. m.; 11 p. m.; patient has slept since my visit. Skin feels cool and moist; has been sweating freely; temperature 97.8°; headache has quite gone. There is no tendency to vomiting, but he says had great difficulty in retaining the antipyrin. Pulse slow and full. Gave pil. hydrarg., pil. col. et hydrarg. aa gr. vj., and ordered 20 grs. of quinine an hour later.

Second day. Temperature 97°. Patient says he had a good night; has been to stool twice. Quinine grs. 10 at 6 and 8 a. m., and again at 1 p. m.; 12 m, temperature 97°; pulse 90, full and compressible; 7 p. m., temperature 100°; pulse 102; pain over liver and spleen more marked than yesterday; tongue extremely furred; skin hot and dry. Gave 10 grs. antipyrin at once, and 15 grs. quinine at night. Left a sleeping draught of pot. brom. and chloral, to be taken if necessary.

Third day. 8 a. m., patient did not sleep well; vomited the sleeping draught. Temperature 99.9°; pulse 94. Tongue very foul; the tenderness over the liver and spleen continues. Quinine grs. 10 at 10 a. m., 1 and 4 p. m.; 4 p. m., the temperature remains the same, but patient says he is feeling better. Pulse 96; moderately full. Tongue clearing at edges. Quinine grs. 10 at 7 p. m., and grs. 15 at 10 p. m. Pil. hydrarg. grs. 4 at 10 p. m. A sleeping draught if necessary.

Fourth day. 9 a. m., temperature 97.8°. Patient took sleeping draught and had a good night. Ten grains given at once and 15 grs. at 1 : 30 p. m.; 6 : 30 p. m., temperature 98°. Has been twice to stool; tongue slightly furred; feels very weak. Quinine grs. 15 at night.

Fifth day. Temperature 96.8°. Patient feeling better. The quinine was continued in smaller doses, and a mixture of arsenic, cinchona and nux vomica prescribed.

This was one of the first cases in which I had recourse to the drug, and I was somewhat chary of using the large doses which I used later. Its effect is, however, well shown on the first day, where the temperature fell from 102.5° to subnormal in four hours, and continued thus until noon on the following day. The return of the fever, I think, was due to my not having given sufficient quinine during the intermission, and perhaps also to the disordered state of the liver. The temperature fell at once after a second dose of blue-pill.

This was the only one of these five cases in which I had an opportunity of examining the blood microscopically, and it may be interesting to mention that I recognized several of the large pigmented bodies which Laveran describes in his *Traité des fièvres Palustres*, but I was unable to satisfy myself of the presence of the crescentic bodies or of the "filament motiles." The red blood corpuscles varied considerably in size, became very quickly crenated, and assumed irregular shapes very readily on pressure. Occasionally a distinctly nucleated red corpuscle could be seen.

CASE 5.—Patient I. K. had passed the last two months moving about in the interior, during which time he had gone through a good deal of fatiguing work, and occasionally had been much exposed to the sun. When returning from this expedition he had suffered from a severe attack of fever accompanied by diarrhœa, which left him in a very reduced and anæmic condition. The exciting cause of the present attack was said to be a chill met with on board the steamer while coming along the coast. I saw the patient about 12 noon. His temperature was then 104.2°; pulse 100, weak and compressible. Tongue yellow and furred, but not markedly so. There was a feeling of nausea, Bowels had been freely opened by a strong purgative, but patient is habitually constipated. There was slight uneasiness on pressure over liver, but none over spleen. Skin moist; intense headache. There was a great feeling of weakness and a sense of oppression on the chest; in fact, throughout the illness the great prostration was one of the most marked features. I ordered a hot drink until the medicines arrived from the hospital. About 2 p. m. 30 grs. of antipyrin were given, the temperature then being 103.6°, but the other conditions remaining the same. There was a little tendency to weakness about this time. At 3 o'clock the temperature had fallen to 103°, and patient was feeling better and inclined to sleep. I repeated the antipyrin. At 6 the temperature had fallen to 101.4°; pulse 82; fuller than before. Patient had been sweating freely. At 6 o'clock 15 grs. of antipyrin were given, and at 7 : 30 10 grs. of quinine. At 9 o'clock the temperature was 99.4°. Gave pil. hydrarg., pil. col. et hydrarg., aa grs. 5, and repeated 10 grs. of quinine. Also left a sleeping draught of pot. brom. and chloral, as patient had passed some very bad nights previously. During the day champagne was administered freely, and liquid food in the form of Liebig's extract of beef, with beef, peptonoid powder, etc., was taken.

Second day. 7 a. m., temperature 98.8°. Slept well, patient feeling better generally; 11 : 30 a. m., still no fever; temperature 98.6°; pulse 62. Ten grains quinine given at 8 a. m. and 12 m.; 5 : 30 p. m., slight return of fever; temperature 100.4°; pulse 86; somewhat bounding. Complained of aches and pains. Gave 30 grs. of antipyrin; 7 : 15 p. m., temperature has risen to 101.8°. Patient feels very weak and despondent, and complains of difficulty of breathing and a tendency to take long breaths. Repeated antipyrin, 30 grs ; 9 : 15 p. m., temperature has begun to fall and is now 101.2°; pulse lower; has been sweating freely; gave 15 grs. quinine and sleeping draught, if necessary; dietetic treatment of a stimulant character, as above.

Third day. 6 a. m., temperature 99.2°, at which it remained until 11, when it began to rise, attaining its maximum (100.7°) at 7 o'clock. Sixty grains of quinine were given throughout the day, and as the tongue still remained yellow and furred 8 grs. of calomel were prescribed.

Fourth day. Bowels freely moved; temperature 99° in the morning, and remained low all day, only rising to 99.4° in the evening. Fifty grains of quinine given throughout the day.

Fifth day. Temperature remains about 99°. Patient improving, but the weakness remains. Forty grains of quinine given. After this patient had no recurrence of fever, but remained in a low anæmic state, which did not yield to tonic treatment, and a sea-voyage was recommended, during the course of which his health improved rapidly.

The severity of this attack is evident, and brings it under the head of billious remittent fevers, although there was a complete intermission on the second day, but this must be attributed to the antipyrin. The rise of temperature on the second day, *after* the administration of 30 grs. of quinine, is interesting, and is the only instance I have met with, and I believe would not have occurred had I given larger doses of quinine during the intermission. The utility of calomel was well illustrated on the fourth day, where a second dose the previous evening caused a marked amelioration of all the symptoms.—*American Journal of the Medical Sciences.*

THE ANGLE OF THE NECK OF THE FEMUR.—In text books on human anatomy we are taught that the angle formed by the neck of the femur with the shaft becomes lessened as years advance, the level of the head of the bone being consequently lowered. Prof. Humphrey has shown that this theory is inaccurate. After careful observations, recorded in the *Journal of Anatomy and Physiology*, he has come to the conclusion that the angle formed by the neck of the thigh bone with the shaft varies considerably in different persons at any given period of life. It is smaller in short than in long bones, and it is also most likely to be small when the pelvis is wide; the combination of these two conditions rendering it usually smaller in women than in men. The angle decreases during the period of growth, but after growth has been completed it does not usually undergo any change, even if life be continued to extreme old age. Some change may take place in exceptional cases, but as a rule the angle remains the same from the adult period till death, at whatever age death may occur. If, during the growth, the limb be relieved of the weight of the body, as in the bedridden state, in paralysis, or in a stump, the angle of the neck with the shaft usually retains the open form of early life, or may even become wider. Professor Humphrey's conclusions will interest the surgeon, and must never be overlooked in cases where the age of a subject at death has to be estimated by examination of the thigh bone.—*Brit. Med. Jour.*

EDITORIAL.

THE NORTH CAROLINA MEDICAL JOURNAL.

A MONTHLY JOURNAL OF MEDICINE AND SURGERY, PUBLISHED IN WILMINGTON, N. C.

Thomas F. Wood, M. D., Wilmington, N. C., } Editors.
Geo. Gillett Thomas, M. D., "

☞ *Original communications are solicited from all parts of the country, and especially from the medical profession of* The Carolinas. *Articles requiring illustrations can be promptly supplied by previous arrangement with the Editors. Any subscriber can have a specimen number sent free of cost to a friend whose attention he desires to call to the* Journal, *by sending the address to this office. Prompt remittances from subscribers are absolutely necessary to enable us to maintain our work with vigor and acceptability. All remittances must be made payable to* Thomas F. Wood, M. D., *P. O. Drawer* 791, *Wilmington, N. C.*

IMPROVEMENT IN THE JOURNAL FOR 1890.

Arrangements have been made with our publishers to improve the Journal for 1890. Although we have given to our readers more than the income from subscribers would justify, from a business view, we are not satisfied with the general appearance of our issue in typography and paper, and have procured a complete new outfit, expecting to present a much improved Journal.

It may not be out of place to mention something of our difficulties. In the very beginning, adopting the title of North Carolina

MEDICAL JOURNAL really restricted our issue largely to this State: for while the republic of medicine is an immense domain, and cannot be restricted by State lines, readers naturally conclude that a Journal with a distinctive State title will be taken up with local medical politics and Society matters. The field, therefore, has been so restricted that our support has been a meagre one, leaving the editors no great deal for their work. It has been necessary to do as much to secure advertiser's patronage as possible, as their pecuniary aid was a great necessity in the earlier days of the JOURNAL, and even now advertisers are our best supporters. How much we owe to their liberality we need not say, but enough to make it sure that we will always try to make it mutually advantageous in the future, and at the same time, avoiding the insertion of any advertisement not in accordance with our ethical obligations.

The JOURNAL, for the first time, is making extra efforts to extend its circulation. The issue for January will be a large one, and we hope to add many new names to our list, and, in order to do this, we ask every doctor to interest himself by sending in at least one new subscriber, and for every two new subscribers sent us we will credit his own subscription with one dollar; for three, one dollar and a half.

The help which our friends hoped we would get out of the adoption of the JOURNAL as the official organ of the Medical Society of North Carolina has been small. In truth, the JOURNAL has been the Society *ad interim*, and has on its part brought more friends to the Society than the Society to it. We acknowledge the compliment of the Society and have by all means proven our inseparable interests, and we will show our faith in the future of the Society by making a large expenditure in improving our work in a literary and scientific way, as well as typographically.

We wish for all of our readers a prosperous New Year, and as by the united efforts of the profession we have been enabled to raise our standard to a degree well worthy of our calling, may we all work with renewed courage to cultivate with more thoroughness the new fields we have occupied.

THOSE WHO HAVE FAILED TO REGISTER.

By the time this issue reaches many of readers registration will have closed, and some will have been left out. If it only falls upon the pretender, who has hedged himself behind the clause of the law which admits such as have been practitioners for a number of years, but who assumed the title—as the Rev. Giles Jowles, who dubbed himself "Reverend" like Napoleon crowned himself Emperor"—we will not care; but if it has fallen upon some elderly brother, who has lived so much to himself that he has missed the full force and meaning of the law, or if he has lived in a county where the clerk of the court has been neglectful of his duty in notifying his old family physician, it may be, because he thought the law of no importance, we shall be sorry. But the law is now a fixed fact, and if any one is so purblind as to believe that this reform is going backward, they are already showing signs of being left in the professional race.

We shall not cease from year to year to study the improvements which the law needs, and urge it upon the attention of the profession and the Legislature, as we have done so untiringly before.

* * *

Sir James Paget writes thus about prescribing fornication as a cure for sexual disorders: "I would just as soon prescribe theft or lying or anything else that God has forbidden. Chastity does no harm to mind or body, its discipline is excellent; marriage can be waited for, and among the many nervous and hypochondriacal patients who have talked to me about fornication I have never heard one say he was better or happier after it; several said they were worse, and many having failed, have been made worse.—*Selected.*

REVIEWS AND BOOK NOTICES.

A Treatise on Diseases of Nose and Throat. By Francke Huntington Bosworth, A.M., M.D. Vol. I. Diseases of the Nose and Naso-Pharyngeal; with 4 colored plates and 182 woodcuts. New York: William Wood & Co., 56 & 58 La Fayette Place, 1889.

There is no subject upon which the general public have been so generally aroused as upon the dangers of catarrh. Tons of printed matter, on catarrh, pass through the mails to be gratuitously distributed, giving minute instruction upon the nature of catarrh, its dread ravages upon the general system, always concluding with the grand moral, "Buy my infallible catarrh remedy and my none-such atomizer or douche." In such a state of mind as such teaching compels, the offices of physicians in towns and country are more than ever visited by anxious persons seeking to get rid of catarrh. While the quacks are busily occupied in thus inflaming the imagination and reaping thereby large sums, the regular specialists are studying with increased zeal the etiology, pathology and treatment of catarrh. Not even gynecology has a greater run than rhinology just now, and there are scores of men all over the country, in almost every small town, even in the conservative South, frying to a crisp the turbinated bodies at the point of a galvano-cautery loop, and already the sad tales of nasal synechia, denuded bone, and anosmia are beginning to find their way in the Journals, and are still more talked about. At this stage, therefore, a good book is needed-- one by a well equipped and conservative writer of experience—and Dr. Bosworth has fulfilled the duty in a bulky volume of 670 pages.

One not skilled in the specialty of the nose and throat had perhaps better withhold his criticism, but our readers want to know what we as general practitioners think of a volume, and as the purchasers of such books must be largely the rank and file of the profession, our opinion is addressed to them. Much of the volume, that is to say, about 100 pages, is taken up with the anatomy and physiology of the nose and the diagnostic and remedial appliances, and, if we are to judge by our own necessities, we should say it is well done. The different forms of rhinitis—the acute, hypertrophic, purulent (of children), atrophic and croupous, with nasal reflexes—cover nearly 100 pages more, and it is to this part of the volume we must go to learn why all this interest is taken at the present day in diseases of the nose. Hay-fever, or, as the author styles it, vaso-motor rhinitis, and asthma, or vaso-motor bronchitis, are very interesting, and of the many prescriptions for hay-fever we note, as a matter of course, that cocaine is the quite constant ingredient. The author lays down the following, which accounts for his admission of asthma into this volume. Hay-fever is dependent upon three conditions:

"1st. A neurotic habit, as was conclusively shown by Beard.

"2d. The presence of pollen in the atmosphere, as shown by the unrivalled experiments of Blackley.

"3d. A disordered condition of the nasal passages, as shown by Daly.

"Now, the view that I advocate is, that asthma also is dependent on three conditions:

"1st. A general neurotic condition, as demonstrated by Salter.

"2d. A diseased condition of the nasal mucous membrane (not bronchial).

"3d. Some obscure condition of the atmosphere exciting the paroxysms."

There seems to be hardly a general disease of the body that has not some local manifestation in the nose, at least we find descriptions of syphilis, tuberculosis, lupus, etc., etc., and a variety of morbid growths, which make a wide pathological field.

Diseases of the naso-pharynx occupy the second part of the volume, and external surgery of the nose the third section, of 40 pages; this part illustrated with chromo-lithographs.

If our readers will consult this volume they will find that the specialists in this line are advancing, and even the most conservative of them resort to procedures which give comfort and relief to their patients. If we would keep our patients we must learn their arts, and nowhere is it so fully set forth as in this work.

The second volume will be devoted to diseases of the larynx, which will make it a desirable companion volume to the one we have noticed.

A HAND-BOOK OF OBSTETRICAL NURSING. By Anna M. Fullerton, M.D. Philadelphia: P. Blakiston, Son & Co, 1012 Walnut Street.

This is an admirable work because it is entirely practical, and written in language that every intelligent nurse could easily understand. The chapters are on "The Signs of Pregnancy," "Management of Pregnancy," "Accidents of Pregnancy," "Preparations for the Labor," "Signs of Approaching Labor and the Process of Labor," "Duties of the Nurse During Labor," "Accidents and Emergencies of Labor," "Care of the New-Born Infant," "Management of the Lying-in," "Characteristics of Infancy in Health and Disease," "The Ailments of Early Infancy." We sincerely wish that every nurse could be thoroughly drilled in all the matters contained in this wise little book before they pretend to competency. In the South very few are the white obstetric nurses, and the colored ones know too much already to have any room for such lessons. Now, it remains for expectant mothers to demand more intelligent nursing, and, by the aid of the doctors and the influence of such timely books, we will get them.

A MANUAL OF OBSTETRICS. By A. F. A. King, A.M., M.D. Philadelphia: Lea Brothers & Co., 1889.

This is our first acquaintance with a book which has been before the profession for several years, it having reached four editions in seven years. The clearness of the type and illustrations and the beauty of the paper is enough, alone, to entice one to examine it, and the examination reveals a well condensed "Manual," in the proper sense of the word, full to the brim of just such information as the student wants, and at the modest price of $2.50. The author's experience as a teacher is well shown in his ability in laying down the principles of the science and art of obstetrics, and in making clear diagnostic and operative manipulations.

ESSAY ON MEDICAL PNEUMATOLOGY: A Physiological, Clinical and Therapeutic Investigation of Gases. By J. N. Demarquay. Translated by Samuel S. Walliau, M.D. Philadelphia: F. A. Davis, 1889.

The revival of the use of oxygen as a therapeutic agent seems to have been the impetus which gave this translation to the American profession. Fifty-eight pages are taken up with the history of oxygen, the author's own conclusion being that "of all these efforts very little was permanent," but he believes that we should examine anew all the facts, and so he has given them to us, following it with an account of the physiological action of oxygen. We notice an italicized paragraph by the translator, which seems to us to lack verification : [in the spleen] "The blood can assume its vermilion color without having previously undergone the influence of passage through the lungs." (Page 82.)

The therapeutic action of oxygen, its application to surgery and the methods of making oxygen and determining its purity are all sufficiently described, and the reader investigating the subject may find here just what he wants, although the tone of the translator is not heartily in accord with his subject, at any rate gives the impression that the author is not up to the latest known on the subject. The Bibliography of the subject begins with 'Priestly's Experiments of Different Kinds of Air," 1774, bringing it down to date.

PHOTOGRAPHIC ILLUSTRATIONS OF SKIN DISEASES, AN ATLAS AND TEXT COMBINED. By George Henry Fox, A.M., M D. New York : E. B. Treat, 771 Broadway.

Parts 9 and 10 of this admirable series have been on our table for some time, attracting the attention of visitors by their remarkable faithfulness to nature. Nothing more could be desired in the selection of examples of disease or of the execution of the photographic portrait, the effect heightened by the delicate coloring than we have here given us, and as this second series has advanced we have remarked how much superior this one is to the first.

The descriptive text is short and concise, and in some instances is not so full as we desire in a book we must frequently consult, but take it for all in all the parts before us for aids to diagnosis have no equal among the very best publications we know. If the choice lay between Hebra's Atlas and the work of Fox, at the same price, we would give our preference to the latter.

The work is to be finished in 12 parts at $2.00 a part.

CURRENT LITERATURE.

EPIDEMIC INFLUENZA.

The telegrams from St. Petersburg announcing the existence there of an epidemic affecting a large proportion of the population, probably, describe—some doubts to the contrary, notwithstanding—an outbreak of true epidemic influenza. It is so long since there has been a well-marked general epidemic of the disease in this country, that it may be well to recall some of the characters of this, in many respects, the most typical of epidemic diseases.

Influenza is of all epidemic diseases that which attacks the largest number of people within a given short time; some of the stories of the majority of individuals in large populations being almost simultaneously attacked, are almost incredible, but the sober estimate of the late Dr. Peacock was that more than one-quarter of the whole population of London suffered during the epidemic of 1847–'48; in Paris at that period the proportion was said to be nearer a half. At one time it was supposed that influenza always travelled across Europe from east to west, and, though this has been proved to be very far from invariable, still it is a fact that in several of the great pandemics the disease has been first heard of in Russia; hence it was at one time known in Italy as the German disease, in Germany as the Russian pest, and curiously enough in Russia as the Chinese disease, owing, probably, to the fact that the outbreak there in 1831 had been preceded by a prevalence of the disease in the previous year in China. The theory which has again been given currency in the telegrams from St. Petersburg that epidemic influenza is a forerunner of cholera, need only be mentioned in order that it may be condemned as utterly unfounded. There has been cholera this autumn in Persia, and it may spread into Southern Russia and become even widely extended; but experience of former epidemics has abundantly proved that there is no kind of casual connection. In fact, in nearly every instance in which epidemics of the two diseases have been coincident the influenza has begun after and ended long before the cholera epidemic. If we are forbidden to speak of any coincidence of natural events, we are at least, as Gluge has well said, debarred from applying to it any other term.

The rapidity with which the disease affects one great tract of country after another is so great that Hirsch has been tempted to say of the great pandemics of 1833 and 1837 that many countries were "smitten by the disease as if at one blow." Thus, in the first of these years it overspread Russia in January and February; in March it appeared in Poland, Bohemia, Northern Germany, Denmark, Egypt and Syria; in April it began to prevail in Austria, Hungary, France, Great Britain and Ireland; Tyrol, Dalmatia and Italy suffered in May, the Netherlands in June, and so on. Not only is the epidemic rapid in attaining its maximum, but the symptoms are sudden in their onset; the impression which this suddenness has made on the popular mind is evidenced by some of the names which have been applied to it; thus in parts of Germany it has been called *Blitz-catarrh* (lightning cold), and in France *la grippe*, a word derived from, or closely related to, the verb *gripper*, which signifies to snatch, and is the equivalent in *argot* for our slang "to nab."

The severity of epidemics has varied a good deal, but, as a rule, influenza is a mild disease with a low mortality. The estimated mortality in the epidemic of 1837, which was of a severer type than any other of which statistics exist, was only 2 per cent. The symptoms are, in the majority of cases, those with which every one is familiar under the name of "a common cold," but in an aggravated form. In severe cases there is sharp fever lasting four or five days, or even longer, and generally accompanied not only by the usual symptoms of coryza, but by very marked nervous depression, which may even amount to stupor or delirium. In other cases gastro-intestinal catarrh is a prominent symptom. The most common complication (if, indeed, it may be so called) is bronchitis, to which catarrhal pneumonia may be superadded, or pulmonary œdema or collapse. To these pulmonary lesions, which are most often observed in the very young or the old and feeble, most of the deaths recorded have been attributed.

A very interesting fact with regard to epidemic influenza is that its prevalence in the human race has often been coincident with the prevalence of a similar disease among domestic animals—dogs, cats, cows, and especially horses. In the horse it commences suddenly with sneezing, followed by rigors, fever, bronchitis, and a short dry cough. Many horses may be attacked simultaneously, or almost so, so that in a few days all the horses in a large town, or even throughout an extensive tract of country, may be incapacitated. We read, for instance, of one of the American epizoötics, that "its appearance in a city was followed by the withdrawal of horses and mules from the streets, until the busiest thoroughfares assumed the stillness of the Sabbath."

That this specific influenza of the horse is identical with the human disease which bears the same name cannot be positively affirmed, but the probability of identity is very great. Loew seems to have been the first to point out this coincidence, which he had observed during the epidemic which swept over Europe from Iceland to Sicily, and from Russia to Spain in 1729–'30. In 1758 Dr. Robert Whytt was struck by the fact that an epidemic of influenza in Great Britain was accompanied by a similar disease in horses, and observations pointing in the same direction were subsequently made by Huzard, Gluge, d'Arboval, and many others.

In 1872 there was a widespread outbreak among horses in the United States, followed, early in 1873, by a universal prevalence of the disease among the people of North America. Dr. James C. Wilson, of Philadelphia, during the prevalence of the disease in Canada and the Eastern States in 1880, observed in several localities that "the horses were first affected, the dogs next, and after the lapse of some weeks, as the animals were recovering, the disease became epidemic; but those persons who took care of horses, and were much in contact with them, neither suffered earlier nor more severely than others not so exposed." It is interesting, therefore, to learn that influenza has been prevalent among horses in this country during the last six weeks, and that recently the epizoötic has attained such large proportions that the price of cartage has gone up in the coal and other markets.

The etiology of epidemic influenza bristles with difficulties; we may, however, at once dismiss the idea that it has anything to do with climate, weather or season; this is proved by very numerous facts, but only one need be mentioned here, namely, that in 1837 it prevailed at the same time, and consequently at exactly opposite seasons, in the northern and southern hemispheres, in midwinter in England, and in midsummer at the Cape of Good Hope. That epidemic influenza is a specific infective disease, produced, therefore, by a uniform and specific cause, can hardly be disputed, and is, indeed, admitted by Professor Hirsch, who refuses to believe that it spreads by contagion, and entirely rejects the theory of a *contagium vivum*. Sir Thomas Watson, however, who saw the disease in the great epidemic of 1847–'48, believed that the instances in which influenza had been observed to break out in a town in those houses first at which travellers from infected localities had lodged were too numerous to be mere coincidences. Modern bacteriology has even provided the theory of contagion with a specific micrococcus, which was described by Dr. Siefert, of Würzburg, a few years ago; he found the "influenza-cocci" in the expectoration from all cases of influenza, but not in that from ordinary bronchial catarrh. Transmission by human intercourse, however, will with difficulty serve to explain all the facts; thus Dr. Jones, of Philadelphia, writing in 1826, before the age of railways and steamboats, says: "This epidemic affects a whole region in the space of a week, may, a whole continent as large as North America, together with all the West Indies, in the course of a few weeks, while the inhabitants could not within so short a time have had any communication or intercourse whatever across such a vast extent of country." A remarkable epidemic on board the French frigate *Duguay-Trouin*, described by Dr. Chaumezière, is also difficult to explain on the theory of human transmission. The epidemic broke out four days after the frigate had sailed from Gorée, in Senegambia, where not a trace of the epidemic had shown itself; while another ship of war which had left Gorée two day earlier arrived at Brest without having had a single case of influenza on board. That the specific cause is, as a rule, carried in the air, is highly probable, and we may be content to speak of it as a miasm, if, to quote Professor Hirsch, "we remember that nothing more is expressed thereby than that which the physicians of the sixteenth and seventeenth centuries called a 'fouling of the air,' and that, in setting up a name in the place of an obscure conception, we do not bring ourselves by that means a single step nearer to a knowledge of the cause of the disease."—*British Medical Journal.*

CREOLIN was taken by a workman, with suicidal intent, in a dose of not less than eight ounces, but he recovered with slight toxic effects.

A NEW ADVANCE IN THE TREATMENT OF UNUNITED FRACTURE.

Every surgeon knows how difficult it is in certain cases to get a broken bone to heal by bony union. The ends may be pegged and hammered and sutured indefinitely without success. In the case of fracture of the radius there are oftentimes special difficulties, since resection—the last resource of the surgeon—leaves a gap between the ends of the radius, which is now shorter than the ulna beside it, and so it is almost impossible to bring the bared ends of the fractured parts into apposition and to keep them there. Even if a piece be cut out of the unfractured ulna, so that the inequality in the length of the two bones is removed, a satisfactory result cannot always be obtained. In the *Lancet*, October 26, 1889, Professor McGill, after commenting upon the above facts and relating his failure with the last-mentioned procedure, explains a new method which he applied successfully in one case, taking the hint from a suggestion made by Dr. MacEwen, who proposed, in case of destruction of the shaft of the humerus by acute necrosis, that a new shaft should be secured by transplantation of bits of new bone.

In Professor McGill's case a man, 20 years of age, had fractured both bones so that the ends of the radius protruded through the wound on the radial side of the forearm. The ulna healed quickly and well, but the radius remained ununited, although the ends had been refreshed and wired three months after the accident. Some eight months afterwards he came to the hospital. He had a scar over the wound, and the ends of the radius were quite movable, the usefulness of forearm and hand being much impaired. An Esmarch's bandage was applied and an incision was made in the line of the old scar. The ends of the bone showed no signs of union, but were rounded and covered by a thick membrane-like periosteum. When this had been filed away an interval of three-quarters of an inch was left between the fragments. This interval was filled with thirteen pieces of bone, each about one-sixth of an inch in length, chiselled from the femur of a freshly killed rabbit. The bones were not wired. The skin-wound was tightly stitched, without drainage, with catgut. Firm pressure was applied by means of salicylated wool and bandages, and the forearm was placed on an anterior splint. There was no suppuration and very little discharge. The patient left hospital in six weeks, with the bone firmly united. Three months later the injured arm was as useful as the other. Is it not possible that this method used by Professor McGill may be of service in the treatment of old ununited fractures in other parts? It is possible that a more vigorous action might be set up, by presence of the implanted healthy bone, than would naturally occur in the fragments of a fractured long-bone in a person of feeble constitution.—*Medical Herald.*

SANITARIA FOR CONSUMPTIVES.

Dr. Paul H. Kretzschmar gives an account of the development and work of the sanitaria for the treatment of consumptives in the United States in a recent issue of the *Medical News.*

Such institutions are, it is admitted, not as a rule necessary for wealthy persons, but those of moderate means can, in many instances, be best taken care of in special institutions where the therapeutic measures can be applied more cheaply on a wholesale plan. In Germany there are a number of hospitals in which consumptives receive treatment. The recent general acceptance of the infectious theory of phthisis has raised some protest against the aggregation of this class of patients, but we do not think that the objections made against them will stand. Phthisis is but slightly contagious, and it seems to be admitted that those who contract the disease must have not only the bacillus, but a favoring soil for its development. Besides this, the measures for preventing the spread of the contagion have been carefully studied out, and are quite well known. The sanitaria for phthisical patients in this country, so far as known, are one at Saranac Lake, one at Asheville, N. C., one at Lake Palmer, Col., one at Colorado Springs, and a camping-out organization which has its headquarters at Santa Fé, New Mexico.

The results of treatment at the Saranac institution, as given by Dr. Trudeau, are certainly very encouraging. He says: "Up to the end of 1888, 146 consumptive patients have been treated, and the results have been about as follows: Deaths 4, or not quite 3 per cent.; failed steadily, 25, about 17 per cent.; stationary or slightly benefited, 38, about 26 per cent.; disease arrested, 63, or 43 per cent.; and cured, 16, or 11 per cent."

The results in the year 1888–'89 are said to have been even still better, about 14 per cent. having been cured and 20 per cent. restored so that they could return to work.

At Saranac the main reliance is placed upon the out-door life. Among drugs, antifebrin and creasote are much used. The pneumatic cabinet is also still employed. At Asheville, oxygen inhalations are given, but creasote has been entirely abandoned, according to Dr. Kretschmar; while Dr. Detweiler constantly uses alcohol, it is not given at the Saranac institution, and only moderately at Asheville.

The following rules, which are placed in the hands of every inmate of the sanitarium at Saranac Lake, can be read with profit by all who have phthisical patients to treat:

Out-of-Door Life.—Patients gradually accustom themselves to leading an out-door life, that is, to remaining eight to ten hours in the open air each day. This should be done gradually, and at first the clothing should be heavy and the exposures to cold or inclement weather moderate in duration. Little by little the open-air sittings and walks are to be increased until the entire day is spent out of doors in all kinds of weather. In stormy weather the sheltered side of the verandas should be used for walking or sitting. When feverish, patients are urged to go out and remain sitting on the verandas well wrapped in suitable clothing.

Exercise.—Violent exercise is injurious. When feverish, patients will do well to make as little exertion as possible. Fatigue, when induced in persons still having active disease, is sure to be followed by loss of appetite, fever, exhaustion, and even sweating. Severe exercise in hot weather is injurious and may be dangerous. Patients will be informed by the physician how much exercise their case requires.

Food.—If unable to eat at the regular meal hours, patients will do well to drink milk every four hours.

Expectoration.—Patients are required always to use the large spittoons in the public rooms and on the verandas, and the pasteboard ones in cottages; the latter should be burned every day in the stoves or fire-places. Expectorating in handkerchiefs or on the floors, or even on the grounds in the immediate vicinity of the buildings, is strictly prohibited.

It has been found that while moist sputum is harmless, when it becomes dried it will rise as dust, and may be inhaled. The above directions are given to guard against this result. Patients, for their own welfare and in order to assist in their rapid recovery, will strictly observe these rules, and will be liable to dismissal for wilful disobedience in this matter, which involves not only their own welfare, but that of others.

Stimulants.—Stimulants are not allowed except under medical advice. No smoking is allowed at any time in the public rooms or on the piazzas. Patients are requested not to smoke at all unless permission is given by the physician.—*Medical Record.*

PROGRESS AT THE UNIVERSITY OF MARYLAND.

Between the powerful stimulus of the Johns Hopkins Hospital and the stringent laws of neighboring States and the impending law in this State, the University of Maryland is about to put into effect some new arrangements both in the medical school and hospital which will be greatly to her credit, even if we suppose that the Faculty was forced to it by the facts above stated. The rapid increase of badly educated physicians has troubled the medical schools least of all; the people, however, grumbled and rebelled, but all in vain. Then all over the country this rumble of discontent has culminated in many States in a downright outcry against the low grade of medical education, and enough influence has been brought to bear on these legislatures to enact and put into action good laws raising this standard. To show what incomplete preliminary training most physicians have had, it is only necessary to read in the past three issues of this *Journal* the carefully prepared and accurate address of Dr. Leartus Connor before the American Academy of Medicine.

The University of Maryland, then, which has made no material advance in a decade or more, is about to lengthen its course and advance its standard. In order to graduate, the applicant must have 75 per cent. as a general average on all branches. If the grade falls below 33 in any one branch, although the general average may be 75, he is conditioned and has to pass a satisfactory examination in the defective branch in the October examination. Formerly a grade of 60 passed a student, so that a dead failure on two or three branches did not necessarily keep him from passing as long as he did well in the others. A preliminary examination on the important English branches or a degree of A.B., or satisfactory evidence of having passed this preliminary examination, is required of all students before entering. These rules will go into effect at once, and, as they will of necessity cut off many students and thereby diminish the income of the Faculty, the latter certainly does deserve some credit, even at this late date.

It is proposed also to make the three-year course compulsory, decrease the number of didactic lectures, increase the number of clinical lectures, lengthen the dispensary hours, so that the different departments will be opened at different hours throughout the day, and thus students may spend more time there taking special courses and examining cases.

In the hospital, the Sisters of Mercy, good women, but untrained as nurses, will leave on December 15th, and a non-sectarian, but trained, matron and a trained head-nurse will take charge at once, the latter having under her a corps of probationers, thus forming the beginning of a training school for nurses. These probationers must comply with certain rules, as in most training schools, and will receive $10 a month in addition to their training.

The next important step which has not been announced, will be the enlarging and remodeling of the hospital. At present one of the Faculty will be the financial manager of the hospital.

There are undoubtedly other good schools in the city, and whether they will see fit to take these steps in advance now and get the credit of raising the general medical standard, or wait until our inactive medical laws go into force and compel them to do it, remains to be seen.

Most readers of the *Journal* are Alumni of the University, and they will hail with delight the proposed advances to be made by their Alma Mater.—*Maryland Medical Journal.*

ANNUAL REPORT OF THE SUPERVISING SURGEON-GENERAL OF THE MARINE HOSPITAL SERVICE OF THE UNITED STATES FOR THE FISCAL YEAR 1889.

This bulky volume of 477 pages is one of marked interest to the general public by reason of the practical matter it contains about the management of yellow fever epidemics, sanitary methods and appliances and quarantine administration, while to the medical man, in addition to the above, there are the most satisfactory of clinical facts from physicians of select ability, laboratory notes upon the large and ever expanding subject of germ-hunting, and over a hundred pages devoted to carefully and systematically performed *post-mortem* examinations. The volume also abounds in folding plate illustrations and clinical charts in profusion.

Few Government reports are divested of dry details and elaboration of red-tape methods as this, for from the very beginning we find practical matter on "Diagnosis of Yellow Fever," by Dr. John Guiteras, a name now well-known by the profession of the country in connection with most excellent work in the pathology and treatment of this dread pest.

His opening sentence on the important topic is: "The diagnosis of yellow fever rests upon the three following cardinal symptoms: The facies, the deviation from the general law of correlation between pulse and temperature, and the albuminuria." These points are satisfactorily elaborated. As regards treatment, we looked with some interest to what Dr. Guiteras could say of Dr. Sternberg's suggestion about bichloride solution. He says: "The results obtained by this treatment have not been better than those obtained by symptomatic treatment." * * * "The practitioners who employed the bichloride report that it had a favorable effect upon the albuminuria."

Following Dr. Guiteras' remarks is a report by Dr. C. Fagét, of New Orleans, of his observations on the yellow fever at Camp Perry. We are not going to follow Dr. Fagét in his very full account, but have marked the volume for future references for clinical portraiture of the disease. Here, though, are a few words about the theory of the pathology of the disease: "I believe this peculiar effect of yellow fever on the pulse can be ascribed to the general pathological process, which is, like that of phosphorus poisoning, an acute fatty degeneration of all the tissues: this degeneration affecting the heart's action, either through the degeneration of the muscular fibres or the nervous centres. To this degeneration can also be ascribed the capillary stases, the tendency to hemorrhages in general, but particularly from the mucous membranes of the mouth and stomach.' * * * "To the rapid fatty degeneration of the liver I would attribute the early yellow suffusion of the eyes, also important for the early diagnosis, as it makes its appearance sometimes from the first day."

The mechanical appliances for cleansing and disinfection are on the largest scale ever attempted, consisting of steamers and cars on wheels, to be moved by sea and rail, to the place desired, explained by detailed drawings.

The report of Dr. George M. Sternberg, the renowned bacteriologist upon the "Prevention of Yellow Fever by Inoculation," being an investigation of Frière and Carmona y Valle. The report is a little over 100 pages, but completely demonstrates the utter fallacy of the pretentious claims made by the Brazilian and Mexican microscopists.

In connection with bacteriological subjects, we have neglected to note what to us is a new item, that malarial organisms were found in the same subjects from whom the typhoid bacilli were obtained. In two cases of this mixed infection Dr. Kinyoun, the director of the Marine Hospital Service laboratory, found plasmodium malariæ in the blood, and bacilli in the stools. There, now! are we to go over the old debates on typho-malarial fever upon this new information!

This volume is more than a Government green (not blue) book, and will hardly meet the sad fate of so many Government publications—finding its way to the lumber-room and junk shop for old paper—if the medical profession can have access to it, as it contains very much of scientific material that cannot be had elsewhere. We are not informed how the general profession can obtain it, but presume a limited number might be had by application to the Surgeon-General of the Service.

CURRENT NOTES.

Dr. J. W. Caviness, a licentiate of the Board of Examiners of 1888 at Fayetteville, died recently at his home.

A Bland Creamy Salve, for some purposes an improvement on cold cream (U. S. P.) can be made thus: Goulard's Cerate ʒ ij, Lanoline ℥, Cold Cream Ointment (U. S. Ph.) ℥ j, and is adapted for application to chapped hands and nipples and many household necessities.

Death After Taking Nitrous Oxide—(Probably the First Case (?).—A painful death occurred in a dentist's house in Edinburgh recently. An old lady, of over 75, visited a dentist for the purpose of having a tooth removed for disease of the antrum. The operation was successfully conducted with the aid of nitrous oxide, but, while the cavity was being treated, the patient was observed to lapse into a state of unconsciousness. All efforts at resuscitation proved ineffectual, and, before further medical advice could be obtained, death had resulted. It appears that the patient had suffered previously from weak cardiac action.—*British Medical Journal.*

Comparative Action of the Natural and Artificial Acids and their Sodium Salts.—Drs. Charteris and McClennan (*Brit. Med. Jour.*) made some experimental researches as to the comparative value of the natural and artificial salicylic acid and the salicylates, in which they show that in the artificial acid there is found a foreign substance in a buff-colored powder. It is more soluble than salicylic acid, and when injected in solution into rabbits is poisonous, in the proportion of 2 grs. to a rabbit weighing 14 ozs. The conclusions from their experiments are that artificial salicylic acid contains an impurity or impurities, and until it can be separated it should not be given as a medicine. Large and repeated doses of the drug are needed in the treatment of acute rheumatism, and hence we may account for the restlessness, the confusion and the delirium sometimes attendant on its use, which have been testified by clinical experience. The experimenters declare that prescriptions of the salicylate of sodium are invariably made up, unless otherwise indicated, from the artificial, and not the natural, salt.

Chas. Chadwick, Otis R. Wyeth, Louis A. Schoen, George J. Schoen, Chas. F. Hermann, Geo. Eyssell and Horace L. Roy, have been fined $500 and costs for counterfeiting a trade-mark preparation known as Bromidia.—*Kansas City Star*, Oct. 29th, 1889.

Hyoscine as a Sedative.—Where morphia and other drugs are inadmissable or without effect, the hydrobromate of hyoscine, given subcutaneously in doses of from 1—100 to 1—50 grs., is said to sometimes produce the happiest results.—*Weekly Medical Review.*

Dr. Richard K. Gregory died in Greensborough, after a short illness, on the 18th December. He was a physician of the most versatile talents, possessing inventive skill, restless, and impatient of ethical restraints, but always a physician. We only know of his death by a news clipping from a daily paper.

To Mix Vaseline and Water.—Vaseline and water may be mixed by the addition of two drops of castor oil to each gramme of the liquid. By this means iodide of potassium may be introduced into an unguent without danger of decomposition.—*Weekly Medical Review.*

Incompatibility of Certain Antiseptic Substances.—The Archives de Pharmacie points out the incompatibility of the following: Corrosive sublimate and iodine; corrosive sublimate and soap; carbolic acid and iodine; carbolic acid and permanganate of potash; iodine and soap; salicylic acid and permanganate of potash; permanganate of potash and oil; soap and glycerin.—*Medical Age.*

Medical Experts.—The Supreme Court of Wisconsin has recently rendered an opinion which is of interest to medical men. The substance of this opinion is that the testimony of a medical witness who has had no practical experience in the treatment of cases of poisoning, and who testifies only from memory and knowledge of what medical works and medical instructors teach on this subject, "is, at best, hearsay, and inadmissable in a criminal trial for murder by poisoning." The general opinion seems to be that this is unjust, but that it is perfectly proper that the lack of practical experience should be considered by the jury, in connection with the expert's other qualifications, in determining the weight to be given to his testimony.—*Weekly Medical Review.*

READING NOTICES.

Paris Exhibition.—W. R. Warner & Co. have received a silver medal at the Paris World's Fair, being the highest of its kind, in recognition of the following claims:

1st. W. R. Warner & Co.'s Pills, quick solubility and accuracy.
2d. Reliability and permanency unsurpassed.
Also for Warner & Co.'s Effervescent Salts.
1st. Superior effervescing properties.
2d. General elegance, excellence and stability.
Physicians should be careful to specify Warner & Co.

Vegetable Alteratives.—Mercury and iodide of potash, separately or combined, has been the sum total of treatment, it may be said, in serious blood disorders as far back as our knowledge extends, and the patient was fortunate indeed, if, in being cured of his original disease, he escaped the constitutional effects of mercurials and iodides. That a purely vegetable medicine should be discovered, which in all useful qualities supplants mercury and iodides in these cases, and at the same time is so devoid of injurious effects that it may be taken in any quantity and for any length of time without harm, is certainly of great importance.

The experience of the past six years establishes, beyond a doubt, that Succus Alterans (McDade) is such a discovery, and, although Dr. J. Marion Sims had good ground upon which to base his statements made in the *British Medical Journal* in 1882, still be "built better than he knew," and it is doubtful if the great surgeon, in teaching the professional world his wonderful operations, ever performed a greater service than in bringing this remedy to the knowledge of his professional brethren. The good effect of Succus Alterans (McDade) in all diseases of the blood, whether due to some deleterious influence introduced from without, or generated within, are unmistakable, while it seems no less useful in impoverished conditions of the blood and diseases arising therefrom.

The highest authorities unite in support of these views, and confirmatory reports are daily passing into medical history.—*Massachusetts Medical Journal.*

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